

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: ERMA CAMERON Examiner #: 71098 Date: 6/14/04
 Art Unit: 1762 Phone Number 302-1416 Serial Number: 10/689423
 Mail Box and Bldg/Room Location: 8D67 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): see attached

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

a composition that is stable at room temperature,
 but reacts at elevated temperature, to make a coating
 or film:

- a polyisocyanate (preferred), polyepoxide
 polyanhydride or polycarbonate

AND

- ~~carbodiimide~~ carbodiimide (see claim 5), as
 a powdered solid (see claim 2).

please search on [(poly) isocyanate or polymethane]
 AND
 [carbodiimide]

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EA</u>	NA Sequence (#) _____	STN <u>\$250.84</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <input checked="" type="checkbox"/>	Dr.Link _____
Date Completed: <u>6-15-04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>5</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>40</u>	Other _____	Other (specify) _____

CLMPTO 05/22/2002 GB

1 (Twice Amended) ^{polyurethane} A process for the preparation of a coating, adhesive, film or sheet wherein a mixture of a polyisocyanate functional, a polyepoxide functional, a polyanhydride functional or a polyketone functional compound or polymer and a dispersion of a compound containing reactive hydrogen, which compound is a ~~polyhydrazide, a polysemicarbazide, a polysulphonylhydrazide, or a~~ carbodihydrazide, in a material which contains no groups which are reactive toward the compound containing reactive hydrogen, in which mixture the reactivities of the isocyanate, epoxide, anhydride or the ketone functions towards the ~~hydrazide, semicarbazide, sulphonylhydrazide or~~ carbodihydrazide is absent or low at ambient conditions and the reactivities are high at temperatures of 50 to 300° C, is applied onto a substrate at ambient temperature, followed by reacting the above compounds at 50 to 300° C for 1 to 10 min, or is applied onto a substrate at ambient temperature, followed by immersing the coated substrate into water of 20 to 100° C for 1 to 10 min.

2 (Amended) The process according to claim 1, wherein at ambient temperature said compound containing reactive hydrogen is a solid material, a powder, a granule, a flake or grind or a mixture thereof.

3 (Amended) The process according to claim 2 wherein size of the grind of said compound containing reactive hydrogen is from 0.5 to 200 μm .

4 (Amended) The process according to claim 1, wherein said polyhydrazide is selected from the group consisting of oxalic dihydrazide, malonic dihydrazide, succinic dihydrazide, adipic dihydrazide, sebacic dihydrazide, dodecanedioic dihydrazide, isophthalic dihydrazide, piperazine N,N'-dihydrazide, m-benzene-dihydrazide, and p-benzene-dihydrazide.

Art Unit: 1700

5. (Twice Amended) The process according to claim 4, wherein said polyhydrazide is selected from the group consisting of ~~adipic dihydrazide~~ and carbodihydrazide

6. (Twice Amended) The process according to claim 1, wherein said polysemicarbazide is selected from the group consisting of ethane-disemicarbazide, butane-disemicarbazide, propane-disemicarbazide, hexane-disemicarbazide, para-benzene-disemicarbazide, toluene-2,4-disemicarbazide, toluene-2,4-disemicarbazide, bis (4-semicarbazido-phenyl)ether, bis (4,4'-hydrozide)-3,3'-dimethoxy biphenyl, di-N,N'-methylamino urea, 4,4'-methylene-bis (cyclohexene semicarbazide), 3-semicarbazide-methyl-3,5,5-trimethylcyclohexyl-semicarbazide and mixtures thereof.

7. (Twice Amended) The process according to claim 4, wherein said polysulphonyl hydrazide is selected from the group consisting of p,p'-oxybis benzene sulphonyl hydrazide, bis(methylhydrazido)sulphate, bis (methylhydrazidosulphonyl)piperazine, and bis p-(hydrazidosulphonylamino)benzene

Claim 8 has been canceled.

9. (Twice Amended) The process according to claim 1, wherein the material which contains no groups which are reactive towards the compound containing reactive hydrogen, is a polyether, a polyester, a polycarbonate, a polyacrylate, a polyvinylalkylether, a polyurethane, a polyacrylate, a polyvinylalkylether, or a polyurethane.

10. (Twice Amended) The process according to claim 1, wherein said mixture of the polyisocyanate functional, the polyepoxy functional, or the polyketone functional compound or polymer and the compound containing reactive hydrogen, is solvent free

→ the matrix material is almost any polymer (do not use these terms)



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BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 7013

SERIAL NUMBER 10/089,423	FILING DATE 05/22/2002 RULE	CLASS 427	GROUP ART UNIT 1762	ATTORNEY DOCKET NO. 30394-1068
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APPLICANTS

Laurentius Cornelius Josephus Hesselmans, 'S-Hertogenbosch, NETHERLANDS;

Dirk Pieter Spek, Meeuwen, NETHERLANDS;

**** CONTINUING DATA *******

This application is a 371 of PCT/NL00/00699 09/29/2000

**** FOREIGN APPLICATIONS *******

NETHERLANDS 1013179 09/30/1999

Foreign Priority claimed 35 USC 119 (a-d) conditions met Verified and Acknowledged	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Examiner's Signature _____ Initials _____	STATE OR COUNTRY NETHERLANDS	SHEETS DRAWING	TOTAL CLAIMS 21	INDEPENDENT CLAIMS 1
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ADDRESS

005179
 PEACOCK MYERS AND ADAMS P C
 P O BOX 26927
 ALBUQUERQUE , NM
 871256927

TITLE

Process for the preparation of a coating, a coated substrate, an adhesive, a film or sheet, for the thus obtained products and the coating mixture to be used in the process

FILING FEE RECEIVED 1020	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
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=> file reg

FILE 'REGISTRY' ENTERED AT 20:24:34 ON 15 JUN 2004

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FILE 'HCAPLUS' ENTERED AT 18:25:32 ON 15 JUN 2004

L1 9 SEA HESSELMANS ?/AU OR HESSELMANNS ?/AU
L2 1026 SEA SPEK ?/AU
L3 1 SEA L1 AND L2
SEL L3 1 RN

FILE 'REGISTRY' ENTERED AT 18:26:09 ON 15 JUN 2004

L4 70 SEA (3779-63-3/BI OR 68084-58-2/BI OR 100224-74-6/BI OR
L5 472123 SEA ?HYDRAZID?/CNS
L6 24 SEA L5 AND L4
L7 3 SEA L6 AND S/ELS
SEL L7 1 RN
L8 1 SEA 332421-39-3/BI
SEL L7 3 RN
L9 1 SEA 80-51-3/BI
L10 4 SEA L4 AND S/ELS
L11 1 SEA L10 NOT L7
SEL L11 1 RN
L12 1 SEA 120551-83-9/BI
E BIS(METHYLHYDRAZIDO) SULFATE/CN
E ?METHYLHYDRAZIDO?/CNS AND ?SULFATE?/CNS
L13 0 SEA ?METHYLHYDRAZIDO?/CNS AND ?SULFATE?/CNS
E SULFURIC ACID, BIS(2-METHYLHYDRAZIDE)/CN
E SULFONIC ACID, BIS(2-METHYLHYDRAZIDE)/CN
E C2H10N4O2

FILE 'LREGISTRY' ENTERED AT 18:46:44 ON 15 JUN 2004

L14 STR

FILE 'REGISTRY' ENTERED AT 18:50:37 ON 15 JUN 2004

L15 0 SEA SSS SAM L14
L16 0 SEA FAM FUL L14
L17 3 SEA L9 OR L8 OR L12
SEL L17 1-3 RN
EDIT E1-E3 /BI /CRN
L18 13 SEA (120551-83-9/CRN OR 332421-39-3/CRN OR 80-51-3/CRN)
L19 10 SEA L18 AND PMS/CI

FILE 'HCA' ENTERED AT 18:54:49 ON 15 JUN 2004

L20 14 SEA L19
L21 679 SEA L17
L22 188705 SEA ?POLYISOCYANAT? OR ?DIISOCYANAT? OR TRIISOCYANAT? OR
POLYURETHAN## OR URETHAN##
L23 265137 SEA EPOXY OR EPOXIES OR EPOXID? OR POLYEPOX?
L24 1907 SEA POLYANHYDRID## OR POLY(A)ANHYDRID##
L25 12987 SEA POLYKETONE# OR POLY(A)KETONE#
L26 52 SEA L21 AND L22
L27 66 SEA L21 AND L23
L28 3 SEA L21 AND L24
L29 4 SEA L21 AND L25
E COATINGS/CV
L30 43456 SEA "COATING(S)"/CV OR COATINGS/CV
E COATING MATERIALS/CV
L31 246864 SEA "COATING MATERIALS"/CV
E COATING PROCESS/CV
L32 111197 SEA "COATING PROCESS"/CV
E ADHESIVES/CV
L33 87733 SEA ADHESIVES/CV
L34 7 SEA L26 AND (L30 OR L31 OR L32)
L35 5 SEA L27 AND (L30 OR L31 OR L32)
L36 4 SEA L26 AND L33
L37 14 SEA L27 AND L33
L38 9 SEA L26 AND L27
L39 2 SEA L20 AND (L30 OR L31 OR L32)
L40 2 SEA L20 AND L33

FILE 'LCA' ENTERED AT 19:09:12 ON 15 JUN 2004

L41 7647 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
OVERLAID? OR LAMIN? OR LAMEL? OR SHEET? OR LEAF? OR
FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR
SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR
OVERSPREAD?)/BI,AB
L42 5976 SEA (ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR
CEMENT? OR CONGLUTIN? OR AGGLUTIN? OR MUCILAG? OR TACK?
OR GLUE? OR GLUING# OR PASTE? OR PASTING# OR GUM? OR
HOLD? OR GRIP? OR GRASP? OR BIND?)/BI,AB
L43 1840 SEA (ADHESI? OR ADHERE? OR STICK? OR CLING? OR BONDER?
OR CONGLUTIN? OR AGGLUTIN? OR MUCILAG? OR TACK? OR GLUE?
OR GLUING# OR PASTE? OR PASTING# OR GUM? OR BINDER?)/BI,A
B

FILE 'HCA' ENTERED AT 19:11:02 ON 15 JUN 2004

L44 34 SEA L26 AND L41
L45 43 SEA L27 AND L41
L46 14 SEA L26 AND L43
L47 27 SEA L27 AND L43

L48 29 SEA (L44 OR L45) AND (L46 OR L47)

FILE 'LCA' ENTERED AT 19:16:14 ON 15 JUN 2004

L49 5586 SEA (PARTICL? OR MICROPARTICL? OR PARTICULAT? OR DUST?
OR GRIT? OR GRAIN# OR GRANUL? OR POWDER? OR SOOT? OR
SMUT? OR FINES# OR PRILL? OR FLAKE# OR PELLET? OR
BB#)/BI,AB

FILE 'HCA' ENTERED AT 19:17:29 ON 15 JUN 2004

L50 9 SEA L26 AND (L49 OR GRIND?)

L51 17 SEA L27 AND (L49 OR GRIND?)

L52 25 SEA L28 OR L29 OR L34 OR L35 OR L36 OR L38 OR L39 OR L40
OR L50

L53 25 SEA (L37 OR L51) NOT L52

L54 11 SEA L48 NOT (L52 OR L53)

FILE 'REGISTRY' ENTERED AT 19:25:41 ON 15 JUN 2004

L55 1 SEA 80-51-3

L56 2 SEA L17 NOT L55

FILE 'HCA' ENTERED AT 19:26:04 ON 15 JUN 2004

L57 2 SEA L56

FILE 'REGISTRY' ENTERED AT 20:08:05 ON 15 JUN 2004

E CARBODIHYDRAZIDE/CN

L58 1 SEA CARBODIHYDRAZIDE/CN

L59 164 SEA 497-18-7/CRN

L60 150 SEA L59 AND PMS/CI
E POLYURETHANE/PCT

L61 66200 SEA POLYURETHANE/PCT
E EPOXY RESIN/PCT

L62 43792 SEA "EPOXY RESIN"/PCT
E POLYANHYDRIDE/PCT

L63 1270 SEA POLYANHYDRIDE/PCT
E POLYKETONE/PCT

L64 17894 SEA POLYKETONE/PCT

L65 58 SEA L59 AND (L61 OR L62 OR L63 OR L64)

FILE 'HCA' ENTERED AT 20:12:36 ON 15 JUN 2004

L66 33 SEA L65

L67 8 SEA L66 AND (L30 OR L31 OR L32)

L68 2 SEA L66 AND L33

L69 20 SEA L66 AND L41

L70 5 SEA L66 AND L43

L71 3 SEA L66 AND (L49 OR GRIND?)

L72 567 SEA L58

L73 41 SEA L72 AND L22

L74 21 SEA L72 AND L23

L75 1 SEA L72 AND L24
 L76 2 SEA L72 AND L25
 L77 8 SEA L73 AND (L30 OR L31 OR L32)
 L78 3 SEA L73 AND L33
 L79 28 SEA L73 AND L41
 L80 15 SEA L73 AND L43
 L81 4 SEA L73 AND (L49 OR GRIND?)
 L82 13 SEA L79 AND L80
 L83 5 SEA L74 AND (L30 OR L31 OR L32)
 L84 7 SEA L74 AND L33
 L85 13 SEA L74 AND L41
 L86 12 SEA L74 AND L43
 L87 1 SEA L74 AND (L49 OR GRIND?)
 L88 8 SEA L85 AND L86
 L89 52 SEA L72 AND (L49 OR GRIND?)
 L90 4 SEA L89 AND ((L22 OR L23 OR L24 OR L25))
 L91 28 SEA L67 OR L68 OR L70 OR L71 OR L75 OR L76 OR L77 OR L78
 OR L81 OR L83 OR L84 OR L87 OR L88 OR L90
 L92 6 SEA L82 NOT L91
 L93 34 SEA L67 OR L68 OR L70 OR L71 OR L75 OR L76 OR L77 OR L78
 OR L81 OR L83 OR L84 OR L87 OR L88 OR L90 OR L82

=> file hca

FILE 'HCA' ENTERED AT 20:24:45 ON 15 JUN 2004

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=> d 193 1-34 cbib abs hitstr hitind

check out

L93 ANSWER 1 OF 34 HCA COPYRIGHT 2004 ACS on STN

138:189514 Process for preparation of coatings, a coated substrates,
 films or sheets. Hesselmans, Laurentius Cornelis Josephus; Van Den
 Goorbergh, Johanna Antonia Maria; Derksen, Andries Johannes (Stahl
 International B.V., Neth.). PCT Int. Appl. WO 2003018660 A1
 20030306, 37 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ,
 BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,
 EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
 KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
 MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY,
 DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT,
 SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO
 2002-NL554 20020821. PRIORITY: NL 2001-1018797 20010822.

AB The process comprises applying to a substrate with a coating compn.

contg. a reactive system of a polyisocyanate-functional, a polyketone-functional, a polyepoxide-functional, a polyanhydride-functional and/or a poly carbonate-functional compd. or polymer (e.g., HDI-polypropylene glycol-trimethylolpropane-2,2-dimethyl-1,3-propanediol copolymer) and a dispersion or fine **powder** of a reactive hydrogen-contg. compd. (e.g., carbodihydrazide), wherein the compn. is not or low reactive at room temp.; reacting the coating at elevating temp.; and consequently adjusting the reaction rate as desired by the addn. of an additive to the coating compn., or to one of the component of the coating compn. prior to the mixing with the other component. Optionally, a second reactive system is present and both systems are reacted as a sequential two step reaction and between these reaction steps the coating is remolded.

IT 499790-17-9P 499790-19-1P 499790-20-4P
 499790-28-2P 499790-29-3P 499790-30-6P
 499790-31-7P 499790-32-8P 499790-33-9P
 499790-34-0P 499790-35-1P 499790-36-2P
 499790-37-3P 499790-38-4P 499790-39-5P
 499790-41-9P 499790-42-0P

(process for prepn. of coatings, a coated substrates, films or sheets)

RN 499790-17-9 HCA

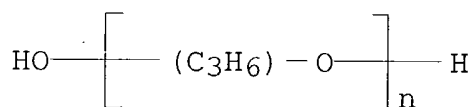
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CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

CCI IDS, PMS



CM 2

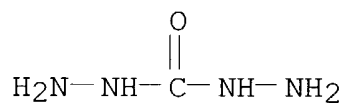
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OCN- (CH₂)₆-NCO

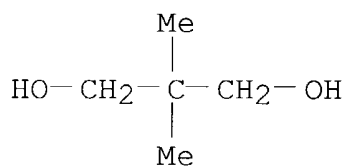
CM 3

CRN 497-18-7
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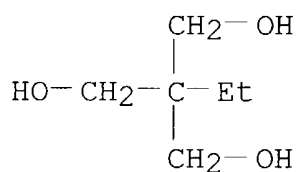
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CRN 126-30-7
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CM 5

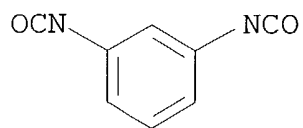
CRN 77-99-6
CMF C6 H14 O3



RN 499790-19-1 HCA
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CM 1

CRN 26471-62-5
CMF C9 H6 N2 O2
CCI IDS



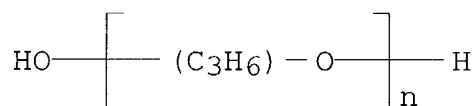
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CM 2

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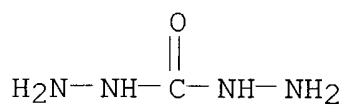
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CCI IDS, PMS



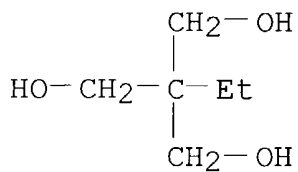
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CRN 497-18-7

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CM 4

CRN 77-99-6

CMF C₆ H₁₄ O₃

RN 499790-20-4 HCA

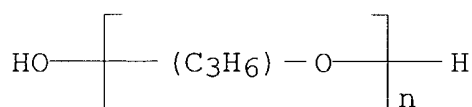
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CM 1

CRN 25322-69-4

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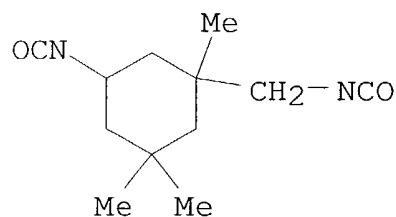
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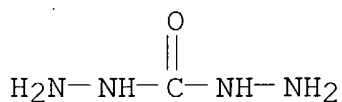
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CM 3

CRN 497-18-7

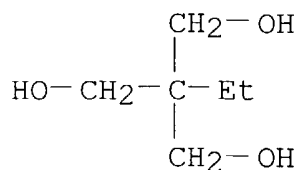
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CM 4

CRN 77-99-6

CMF C6 H14 O3



RN 499790-28-2 HCA

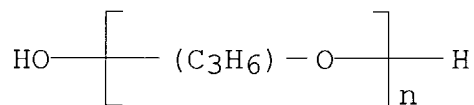
CN Carbonic dihydrazide, polymer with 1,6-diisocyanatohexane, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

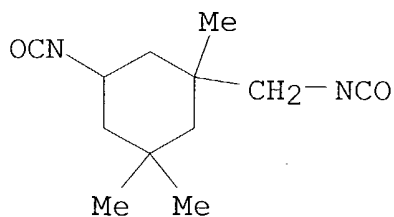
CCI IDS, PMS



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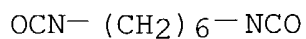
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CM 3

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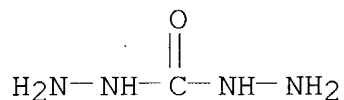
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CM 4

CRN 497-18-7

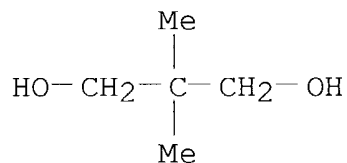
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CM 5

CRN 126-30-7

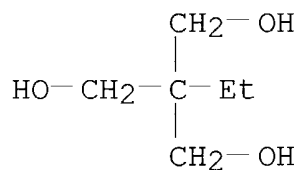
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CM 6

CRN 77-99-6

CMF C6 H14 O3



RN 499790-29-3 HCA

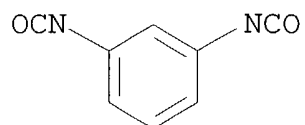
CN Carbonic dihydrazide, polymer with 1,6-diisocyanatohexane,
1,3-diisocyanatomethylbenzene, 2,2-dimethyl-1,3-propanediol,
2-ethyl-2-(hydroxymethyl)-1,3-propanediol and α -hydro- ω -
hydroxypoly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS



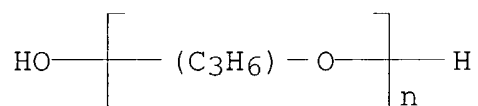
D1-Me

CM 2

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

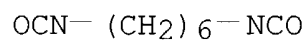
CCI IDS, PMS



CM 3

CRN 822-06-0

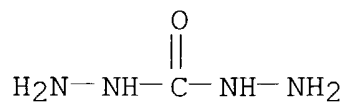
CMF C8 H12 N2 O2



CM 4

CRN 497-18-7

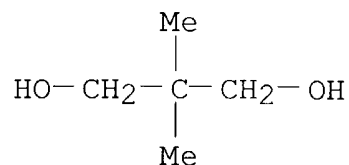
CMF C H6 N4 O



CM 5

CRN 126-30-7

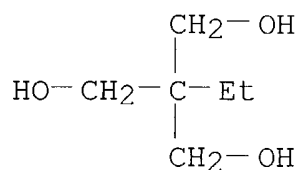
CMF C5 H12 O2



CM 6

CRN 77-99-6

CMF C6 H14 O3



RN 499790-30-6 HCA

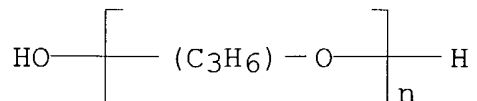
CN Carbonic dihydrazide, polymer with 1,6-diisocyanatohexane, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

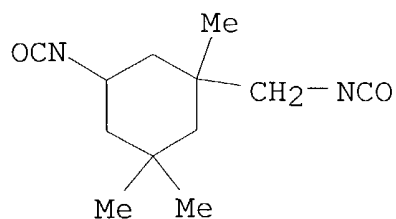
CCI IDS, PMS



CM 2

CRN 4098-71-9

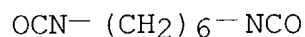
CMF C12 H18 N2 O2



CM 3

CRN 822-06-0

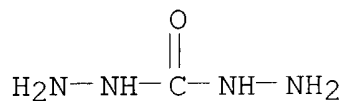
CMF C8 H12 N2 O2



CM 4

CRN 497-18-7

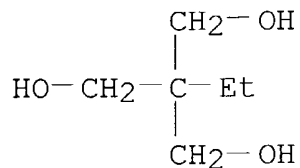
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3

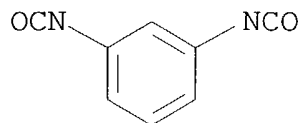


RN 499790-31-7 HCA

CN Carbonic dihydrazide, polymer with 1,3-diisocyanatomethylbenzene, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane (9CI) (CA INDEX NAME)

CM 1

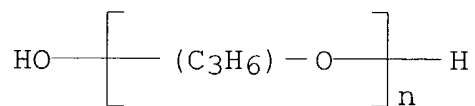
CRN 26471-62-5
 CMF C9 H6 N2 O2
 CCI IDS



D1-Me

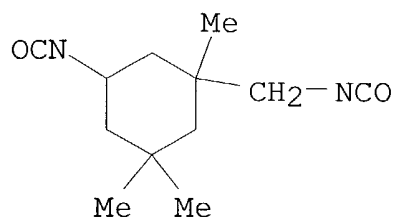
CM 2

CRN 25322-69-4
 CMF (C₃ H₆ O)_n H₂ O
 CCI IDS, PMS



CM 3

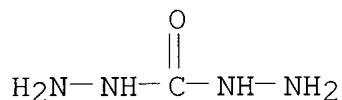
CRN 4098-71-9
 CMF C₁₂ H₁₈ N₂ O₂



CM 4

CRN 497-18-7

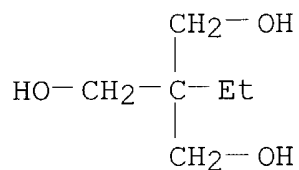
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3



RN 499790-32-8 HCA

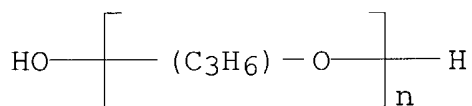
CN Carbonic dihydrazide, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and 1,1'-methylenebis[4,4-diisocyanatocyclohexane] (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

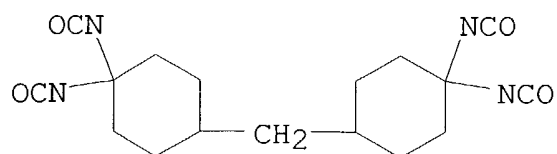
CCI IDS, PMS



CM 2

CRN 17057-17-9

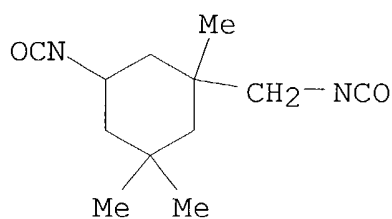
CMF C17 H20 N4 O4



CM 3

CRN 4098-71-9

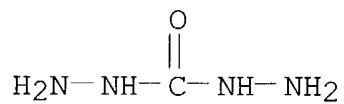
CMF C12 H18 N2 O2



CM 4

CRN 497-18-7

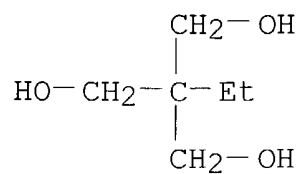
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3



RN 499790-33-9 HCA

CN Carbonic dihydrazide, polymer with Desmodur N 3300,
2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -
hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 5-isocyanato-1-
(isocyanatomethyl)-1,3,3-trimethylcyclohexane (9CI) (CA INDEX NAME)

CM 1

CRN 104559-01-5

CMF Unspecified

CCI MAN

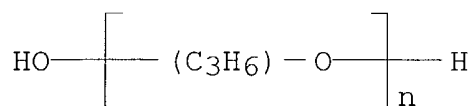
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

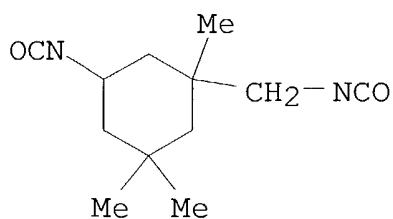
CCI IDS, PMS



CM 3

CRN 4098-71-9

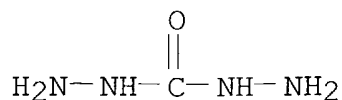
CMF C12 H18 N2 O2



CM 4

CRN 497-18-7

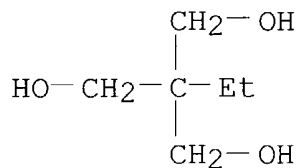
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3



RN 499790-34-0 HCA

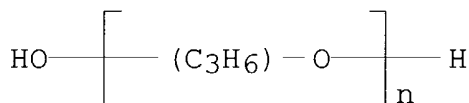
CN Carbonic dihydrazide, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and 1,3,5-tris(6-isocyanatohexyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

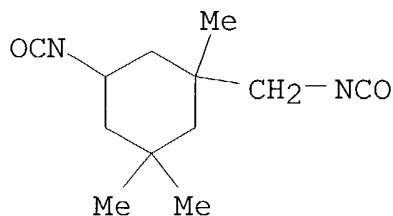
CCI IDS, PMS



CM 2

CRN 4098-71-9

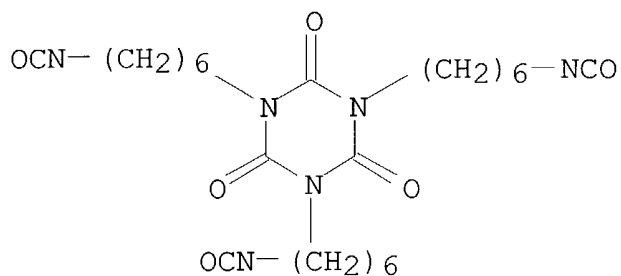
CMF C12 H18 N2 O2



CM 3

CRN 3779-63-3

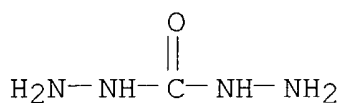
CMF C24 H36 N6 O6



CM 4

CRN 497-18-7

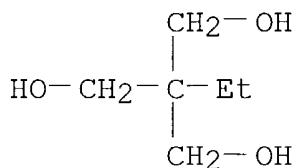
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3



RN 499790-35-1 HCA

CN Carbonic dihydrazide, polymer with 1,6-diisocyanatohexane, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] and PEC 205 (9CI) (CA INDEX NAME)

CM 1

CRN 332849-22-6

CMF Unspecified

CCI PMS, MAN

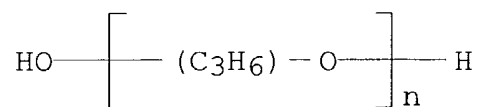
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 25322-69-4

CMF (C3 H6 O)n H2 O

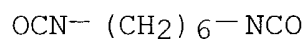
CCI IDS, PMS



CM 3

CRN 822-06-0

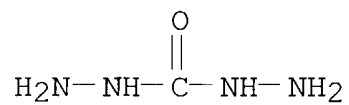
CMF C8 H12 N2 O2



CM 4

CRN 497-18-7

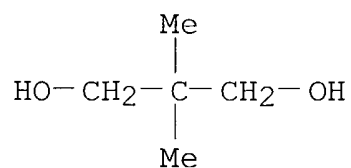
CMF C H6 N4 O



CM 5

CRN 126-30-7

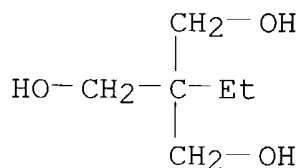
CMF C5 H12 O2



CM 6

CRN 77-99-6

CMF C6 H14 O3



RN 499790-36-2 HCA

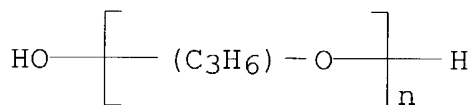
CN Carbonic dihydrazide, polymer with 1,4-butanediol,
 1,6-diisocyanatohexane, 2,2-dimethyl-1,3-propanediol,
 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and α -hydro- ω -
 hydroxypoly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

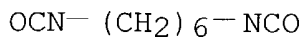
CCI IDS, PMS



CM 2

CRN 822-06-0

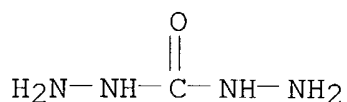
CMF C8 H12 N2 O2



CM 3

CRN 497-18-7

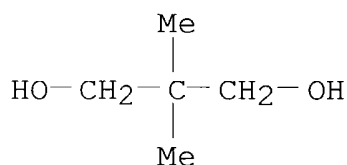
CMF C H6 N4 O



CM 4

CRN 126-30-7

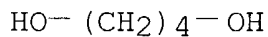
CMF C5 H12 O2



CM 5

CRN 110-63-4

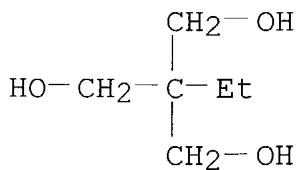
CMF C4 H10 O2



CM 6

CRN 77-99-6

CMF C6 H14 O3



RN 499790-37-3 HCA

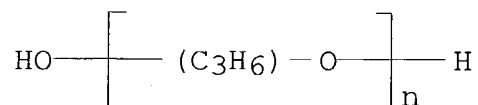
CN Carbonic dihydrazide, polymer with 5-amino-1,3,3-trimethylcyclohexanemethanamine, 1,6-diisocyanatohexane, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

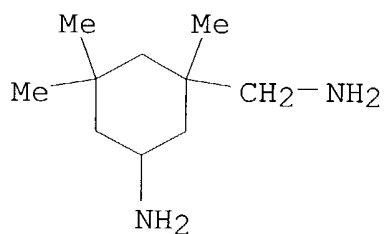
CCI IDS, PMS



CM 2

CRN 2855-13-2

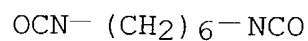
CMF C10 H22 N2



CM 3

CRN 822-06-0

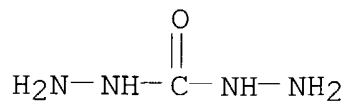
CMF C8 H12 N2 O2



CM 4

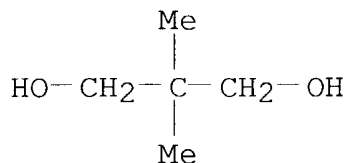
CRN 497-18-7

CMF C H6 N4 O



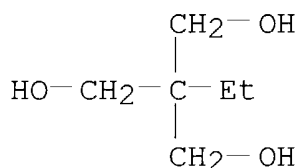
CM 5

CRN 126-30-7
CMF C5 H12 O2



CM 6

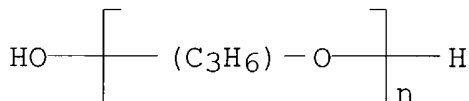
CRN 77-99-6
CMF C6 H14 O3



RN 499790-38-4 HCA
CN Carbonic dihydrazide, polymer with 5-amino-1,3,3-trimethylcyclohexanemethanamine, 1,6-diisocyanatohexane, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, formaldehyde, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 1,3,5-triazine-2,4,6-triamine (9CI) (CA INDEX NAME)

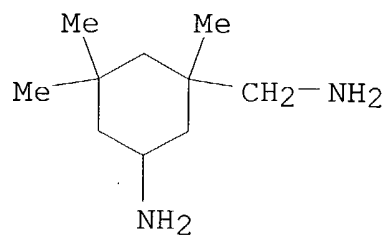
CM 1

CRN 25322-69-4
CMF (C3 H6 O)_n H2 O
CCI IDS, PMS



CM 2

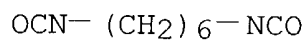
CRN 2855-13-2
CMF C10 H22 N2



CM 3

CRN 822-06-0

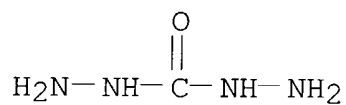
CMF C8 H12 N2 O2



CM 4

CRN 497-18-7

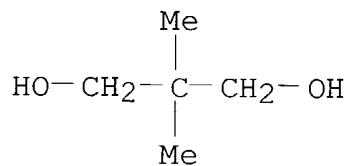
CMF C H6 N4 O



CM 5

CRN 126-30-7

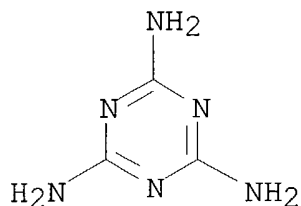
CMF C5 H12 O2



CM 6

CRN 108-78-1

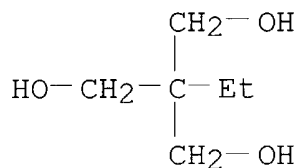
CMF C3 H6 N6



CM 7

CRN 77-99-6

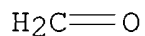
CMF C6 H14 O3



CM 8

CRN 50-00-0

CMF C H2 O



RN 499790-39-5 HCA

CN Carbonic dihydrazide, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and PEC 205 (9CI) (CA INDEX NAME)

CM 1

CRN 332849-22-6

CMF Unspecified

CCI PMS, MAN

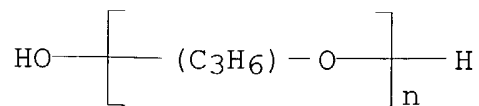
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 25322-69-4

CMF (C3 H6 O)n H2 O

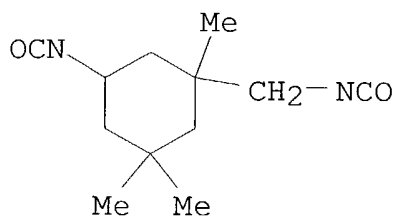
CCI IDS, PMS



CM 3

CRN 4098-71-9

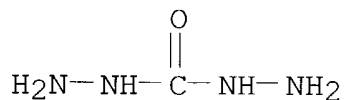
CMF C12 H18 N2 O2



CM 4

CRN 497-18-7

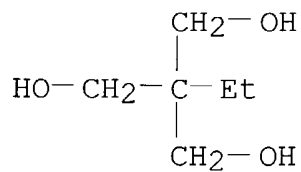
CMF C H6 N4 O



CM 5

CRN 77-99-6

CMF C6 H14 O3



RN 499790-41-9 HCA

CN Carbonic dihydrazide, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-

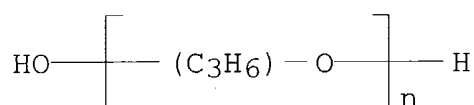
propanediol, formaldehyde, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and 1,3,5-triazine-2,4,6-triamine (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

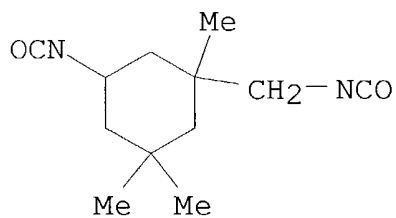
CCI IDS, PMS



CM 2

CRN 4098-71-9

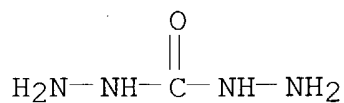
CMF C12 H18 N2 O2



CM 3

CRN 497-18-7

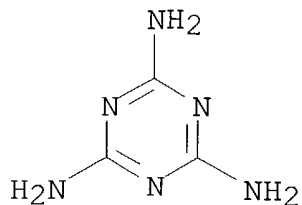
CMF C H6 N4 O



CM 4

CRN 108-78-1

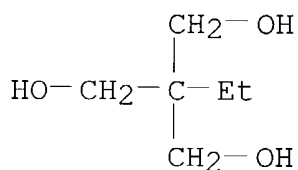
CMF C3 H6 N6



CM 5

CRN 77-99-6

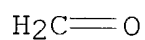
CMF C6 H14 O3



CM 6

CRN 50-00-0

CMF C H2 O



RN 499790-42-0 HCA

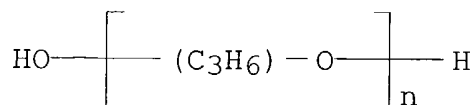
CN Carbonic dihydrazide, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and piperazine (9CI) (CA INDEX NAME)

CM 1

CRN 25322-69-4

CMF (C3 H6 O)_n H2 O

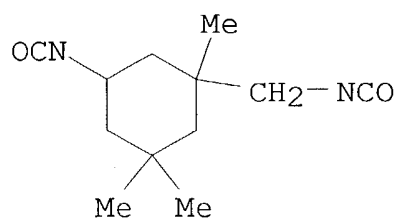
CCI IDS, PMS



CM 2

CRN 4098-71-9

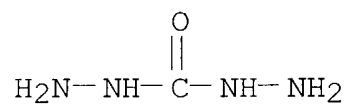
CMF C12 H18 N2 O2



CM 3

CRN 497-18-7

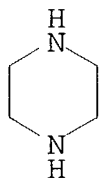
CMF C H6 N4 O



CM 4

CRN 110-85-0

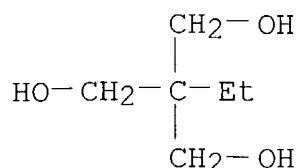
CMF C4 H10 N2



CM 5

CRN 77-99-6

CMF C6 H14 O3



IC ICM C08G018-12

ICS C08G018-38; C09D175-04; C09J175-04

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 38

IT **Coating materials**

Plastic films

(process for prepn. of coatings, a coated substrates, films or sheets)

IT 113303-88-1P 332421-16-6P **499790-17-9P** 499790-18-0P
499790-19-1P 499790-20-4P 499790-21-5P
 499790-22-6P 499790-23-7P 499790-24-8P 499790-25-9P
 499790-26-0P 499790-27-1P **499790-28-2P**
499790-29-3P 499790-30-6P 499790-31-7P
499790-32-8P 499790-33-9P 499790-34-0P
499790-35-1P 499790-36-2P 499790-37-3P
499790-38-4P 499790-39-5P 499790-41-9P
499790-42-0P

(process for prepn. of coatings, a coated substrates, films or sheets)

L93 ANSWER 2 OF 34 HCA COPYRIGHT 2004 ACS on STN

138:123563 Cyclic polyolefin **laminates** with improved surface **adhesion** and their manufacture. Manpo, Takashi; Takanohashi, Hiroaki (Asahi Kasei Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2003025506 A2 20030129, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-219433 20010719.

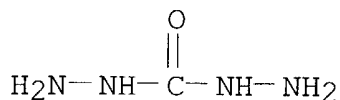
AB The **laminates**, useful for gas-barrier packaging materials, etc., are manufd. by oxidn. of cyclic polyolefin moldings for forming ketone groups on the surfaces, applying solns. contg. ketone-reactive compds. and polar group-contg. polymers for forming polymer **layers**, and reaction of the ketone groups with the ketone-reactive compds. Thus, a cyclohexene- α -methylvinylcyclohexane copolymer **film** was irradiated with UV for forming ketone groups on the surface, **coated** with a soln. contg. adipic dihydrazide and vinyl alc.-vinyl Me ketone copolymer, heated at 150° for 10 min, and sputtered with SiO₂ to give a **coated film** with improved **adhesion**, light transmittance (550 nm) 91%, O permeability 0.08 mL/m²-day, and moisture permeability 0.03 mL/m²-day.

IT **497-18-7**, Carbohydrazide

(crosslinking agent; manuf. of cyclic polyolefin
laminates with improved surface **adhesion**)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM B32B027-00

ICS B32B027-34; C08J007-00; C08J007-04; C08L023-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 55, 56, 57

ST cyclic polyolefin **lamine** gas barrier packaging ketone
 silica; cyclohexene methylvinylcyclohexane polymer **film**
 ketone adipic hydrazide; vinyl alc methyl ketone adipic hydrazide
 polymer

IT Ceramics

(cyclic polyolefin **laminates** coated with;
 manuf. of cyclic polyolefin **laminates** with improved
 surface **adhesion**)

IT Metals, uses

(cyclic polyolefin **laminates** coated with;
 manuf. of cyclic polyolefin **laminates** with improved
 surface **adhesion**)

IT Acrylic polymers, uses

Polyamides, uses

Polyimides, uses

(cyclic polyolefin moldings **coated** with; manuf. of
 cyclic polyolefin **laminates** with improved surface
adhesion)

IT Packaging materials

(**films**, transparent; manuf. of cyclic polyolefin
laminates with improved surface **adhesion**)

IT Packaging materials

(**laminated films**, gas-impermeable; manuf. of
 cyclic polyolefin **laminates** with improved surface
adhesion)

IT Crosslinking agents

(manuf. of cyclic polyolefin **laminates** with improved
 surface **adhesion**)

IT **Laminated** plastics, uses

(manuf. of cyclic polyolefin **laminates** with improved
 surface **adhesion**)

IT Cycloalkenes

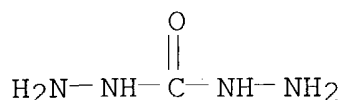
(polymers; manuf. of cyclic polyolefin **laminates** with
 improved surface **adhesion**)

- IT **Polyurethanes, uses**
(polyoxyalkylene-, cyclic polyolefin moldings **coated** with; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 123303-71-9, Arton F
(Arton F; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT **497-18-7, Carbohydrazide** 1071-93-8, Adipic dihydrazide
(crosslinking agent; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 490025-69-9P 490025-70-2P
(cyclic polyolefin moldings **coated** with; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 9002-85-1, Poly(vinylidene chloride) 9011-14-7, Delpet 560F
9069-50-5, Polytetramethylene oxide-TDI copolymer 142787-53-9,
2,5-Furandione, polymer with benzenediamine 142900-41-2
(cyclic polyolefin moldings **coated** with; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 9003-53-6DP, Polystyrene, hydrogenated 25155-73-1DP, hydrogenated
25498-06-0P, Poly(vinylcyclohexane) 226943-20-0DP, 492R,
hydrogenated 478918-18-2DP, Cyclohexadiene- α -methylstyrene
copolymer, hydrogenated 490025-67-7P, Cyclohexene- α -
methylvinylcyclohexane copolymer 490025-68-8P
(manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 27056-69-5, Poly(cyclododecene) 291522-63-9, Zeonor 1600R
(manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- IT 7631-86-9, Silica, uses 50926-11-9, ITO
(sputtered; manuf. of cyclic polyolefin **laminates** with improved surface **adhesion**)
- L93 ANSWER 3 OF 34 HCA COPYRIGHT 2004 ACS on STN
135:68620 Heat-developable silver halide photosensitive material and its
processing. Hanyu, Takeshi; Usakawa, Yasushi (Konica Co., Japan).
Jpn. Kokai Tokkyo Koho JP 2001174948 A2 20010629, 33 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-357498 19991216.
- AB The title material contains a **binder** which is cured with
an **epoxy** compd. and a hydrazide compd. The material is
processed by using a developing device having a heating drum and an
opposing roller comprising silicone rubber contg. Fe oxide. Since
the material has high membrane strength, storage stability, and
scratch resistance and the roller has high surface smoothness and
soiling resistance, images can be formed without color remaining or
stain.
- IT **497-18-7, Carbohydrazide**

(crosslinking agent; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM G03C001-498

ICS G03C001-498; G03D013-00

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST **binder epoxy** hydrazide curing heat developable silver halide photosensitive; scratch soiling resistance heat developable silver halide photosensitive; silicone rubber iron oxide roller heat development silver halide

IT **Coating materials**

(antisoiling; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)

IT Silicone rubber, uses

(development roller; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)

IT **Binders**

Crosslinking agents

Photothermographic copying

(heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)

IT **Coating materials**

(scratch-resistant; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)

IT **497-18-7**, Carbohydrazide 996-98-5, Oxalic acid dihydrazide 1071-93-8, Adipic acid dihydrazide 2095-03-6 2451-62-9 2580-60-1, Diglycollic acid dihydrazide 3568-29-4 3878-43-1 4080-98-2 4146-43-4, Succinic acid dihydrazide 5026-74-4 7327-24-4 13043-98-6, Pimelic acid dihydrazide 13236-02-7 14628-35-4 19389-73-2 20247-84-1, Suberic acid dihydrazide 28768-32-3 85954-11-6 100145-02-6 161429-36-3

(crosslinking agent; heat-developable silver halide

- photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)
- IT 1309-38-2, magnetite, uses 1317-60-8, Hematite, uses (development roller contg.; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)
- IT 9003-55-8, Butadiene-styrene copolymer (latex, crosslinked; heat-developable silver halide photosensitive material contg. **binder** cured with **epoxy** compd. and hydrazide for high scratch and soiling resistance)
- L93 ANSWER 4 OF 34 HCA COPYRIGHT 2004 ACS on STN
134:282166 Preparation of a **coating**, a **coated** substrate, an **adhesive**, a **film** or **sheet**, and the **coating** mixture to be used. Hesselmans, Laurentius Cornelius Josephus; Spek, Dirk Pieter (Stahl International B.V., Neth.). PCT Int. Appl. WO 2001023451 A2 20010405, 33 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-NL699 20000929. PRIORITY: NL 1999-1013179 19990930. *my case*
- AB In this process, a mixt. of a **polyisocyanate** functional, a **polyepoxide** functional, a **polyanhydride** functional or a **polyketone** functional compd. or polymer and a compd. contg. reactive H, in which the compd. contg. reactive H is dispersed in a nonreactive matrix, which mixt. is not or low reactive at ambient conditions and highly reactive under selected conditions, is applied onto a substrate at ambient temp., followed by heating. At ambient temp. the compd. contg. reactive H is a solid material, a **powder**, a **granule**, a **flake** or **grind** or a ground mixt. The **coatings**, **coated** substrates, **adhesives**, **films**, **sheets**, impregnated substrates, synthetic leathers, in-mold **coatings**, **coated** leathers, **coated** poly(vinyl chloride), **coated** nonwovens, **coated** coagulated **polyurethane** substrates, breathable **coated** substrates, are obtained by applying the the title process.
- IT 332421-20-2P 332421-21-3P

(coating or film; for coating,
 adhesive, a film or sheet formulated
 from a reactive mixt. of long pot life, fast reaction, and low
 toxic vapors)

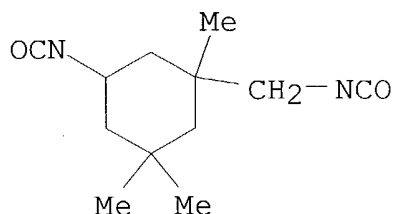
RN 332421-20-2 HCA

CN Hexanedioic acid, polymer with carbonic dihydrazide,
 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-
 propanediol, 1,6-hexanediol and 5-isocyanato-1-(isocyanatomethyl)-
 1,3,3-trimethylcyclohexane (9CI) (CA INDEX NAME)

CM 1

CRN 4098-71-9

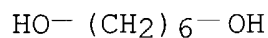
CMF C12 H18 N2 O2



CM 2

CRN 629-11-8

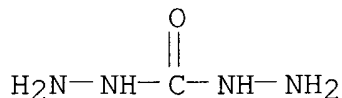
CMF C6 H14 O2



CM 3

CRN 497-18-7

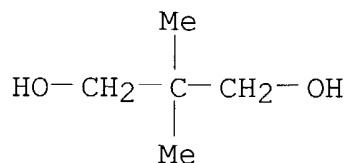
CMF C H6 N4 O



CM 4

CRN 126-30-7

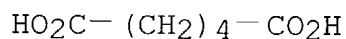
CMF C5 H12 O2



CM 5

CRN 124-04-9

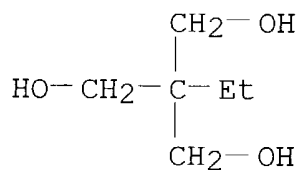
CMF C6 H10 O4



CM 6

CRN 77-99-6

CMF C6 H14 O3



RN 332421-21-3 HCA

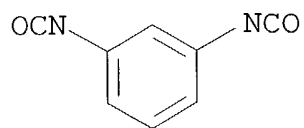
CN Hexanedioic acid, polymer with carbonic dihydrazide,
 1,3-diisocyanatomethylbenzene, 2,2-dimethyl-1,3-propanediol,
 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and 1,6-hexanediol (9CI)
 (CA INDEX NAME)

CM 1

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS

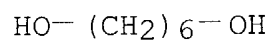


D1-Me

CM 2

CRN 629-11-8

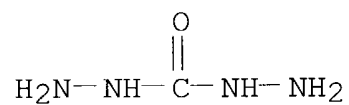
CMF C6 H14 O2



CM 3

CRN 497-18-7

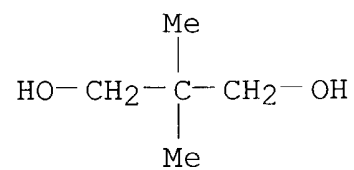
CMF C H6 N4 O



CM 4

CRN 126-30-7

CMF C5 H12 O2



CM 5

CRN 124-04-9

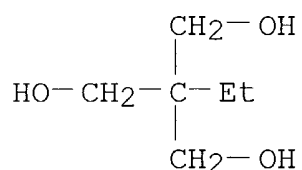
CMF C6 H10 O4

 $\text{HO}_2\text{C}-(\text{CH}_2)_4-\text{CO}_2\text{H}$

CM 6

CRN 77-99-6

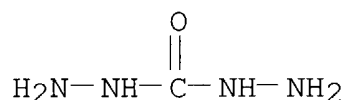
CMF C6 H14 O3



IT 497-18-7, Carbodihydrazide
 (curative; for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM C08G018-00

CC 42-2 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 38

ST hydrazide solid curative **coating**; carbazide solid curative **coating**; semicarbazide solid curative **coating**; sulfonylhydrazide solid curative **coating**; **polyurethane coating** curative

IT **Adhesives**
Coating materials
 Crosslinking kinetics
Films
 Leather substitutes
 (adhesive, a film or sheet formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)

IT Nonwoven fabrics
 (for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life,

- fast reaction, and low toxic vapors)
- IT **Epoxy** resins, uses
(for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT **Polyurethanes**, uses
(polyether-; for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT Crosslinking agents
(reactive hydrogen compds.; **adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 332421-16-6P 332421-17-7P 332421-18-8P 332421-19-9P
332421-20-2P 332421-21-3P 332421-23-5P
 332421-24-6P 332421-25-7P 332421-26-8P 332421-27-9P
 332421-28-0P 332421-29-1P 332421-30-4P 332421-31-5P
 332421-32-6P 332421-33-7P 332840-39-8P
 (coating or film; for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 1071-93-8P, Adipic dihydrazide 51440-70-1P 52284-45-4P
 72044-86-1P 332421-14-4P
 (curative; for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 50-01-1, Guanidine hydrochloride 56-87-1, Lysine, uses 80-51-3, p,p'-Oxybis benzene sulfonyl hydrazide 110-85-0, Piperazine, uses 142-64-3, Piperazine dihydrochloride **497-18-7**, Carbodihydrazide 506-93-4, Guanidine nitrate 593-87-3, Guanidine acetate 925-83-7, Sebacic dihydrazide 996-98-5, Oxalic dihydrazide 2760-98-7, Isophthalic dihydrazide 3815-86-9, Malonic dihydrazide 4080-98-2 4146-43-4, Succinic dihydrazide 7204-34-4, Piperazine diacetate 29557-85-5 32251-26-6 62917-74-2 92238-37-4 100224-74-6, Guanidine carbonate 120551-83-9 123852-58-4 126953-51-3 199926-21-1 332421-34-8 332421-36-0 332421-37-1 332421-39-3 332421-40-6 332840-40-1
 (curative; for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 109-85-3DP, reaction products with **polyurethane** prepolymer 116-09-6DP, Hydroxyacetone, reaction products with **polyurethane** prepolymer 68084-58-2DP, reaction products with hydroxyacetone 332849-22-6DP, PEC 205, reaction products with methoxyethylamine
 (for **coating, adhesive, a film** or **sheet** formulated from a reactive mixt. of long pot life,

- fast reaction, and low toxic vapors)
- IT 302-01-2, Hydrazine, reactions 822-06-0, Hexamethylene diisocyanate 4098-71-9, IPDI 5124-30-1 26471-62-5, TDI (for **coating, adhesive, a film or sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 3779-63-3, N,N',N''-Tris(6-isocyanatohexyl)isocyanurate 332855-83-1, RU 4049 332855-89-7, RU 3952 332855-92-2, RU 3953 (for **coating, adhesive, a film or sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 9002-86-2, PVC (leather substitutes; for **coating, adhesive, a film or sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- IT 3779-63-3DP, urethane derivs. with hydroxyacetone 9040-80-6P 68084-58-2P 70640-42-5P 332421-12-2P (prepolymer; for **coating, adhesive, a film or sheet** formulated from a reactive mixt. of long pot life, fast reaction, and low toxic vapors)
- L93 ANSWER 5 OF 34 HCA COPYRIGHT 2004 ACS on STN
- 134:43463 Water-based curable resin composition and its coated material with water-, weather-, and fouling-resistance. Tomita, Hidetoshi; Kuwamura, Shinichi (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000344986 A2 20001212, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-122303 19990428. PRIORITY: JP 1999-91517 19990331.
- AB Title coating compn. comprises (A) copolymer prepd. by polymn. of amino-contg. vinyl monomer, carboxyl-contg. vinyl monomer, fluoroolefin, and other vinyl monomers in the presence or absence of emulsifying agent and/or dispersion stabilizing agent, (B) compd. contg. ≥ 2 epoxy groups or compd. contg. epoxy and hydrolyzable silyl groups, and (C) compd. contg. hydrazino group. Thus a compn. comprising water-sol. copolymer prepd. from hydroxybutyl vinyl ether, vinyl acetate, dimethylaminoethyl methacrylate, diacetone acrylamide, poly(ethylene oxide) allyl Me ether, and chlorotrifluoroethylene 100, A 187 3.4, carbodihydrazide 3.0, Texanol Ester-Alc. 6, pigment base 50, and curing catalyst 0.5 part, was coated on a glass plate, showing gel fraction 98, pencil hardness 3H, accelerated weather and fouling-resistance, and drying property.
- IT 312715-23-4P 312715-24-5P (prepn. of water-based curable resin compn. and coated material with water-, weather-, and fouling-resistance)
- RN 312715-23-4 HCA
- CN 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with carbonic dihydrazide, chlorotrifluoroethene,

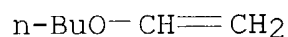
N-(1,1-dimethyl-3-oxobutyl)-2-propenamide, ethenyl acetate,
 (ethenyloxy)butanol, 2,2'-[1,6-hexanediylbis(oxyethylene)]bis[oxira
 ne] and α -methyl- ω -(2-propenyloxy)poly(oxy-1,2-
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 42978-84-7

CMF C6 H12 O2

CCI IDS



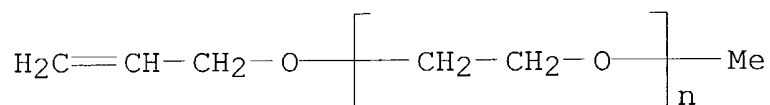
D1-OH

CM 2

CRN 27252-80-8

CMF (C2 H4 O)_n C4 H8 O

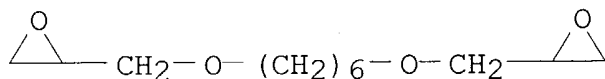
CCI PMS



CM 3

CRN 16096-31-4

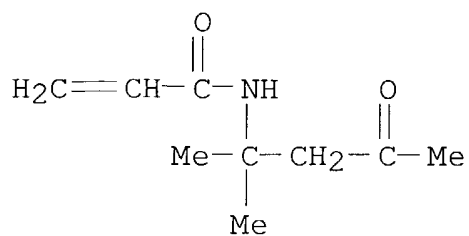
CMF C12 H22 O4



CM 4

CRN 2873-97-4

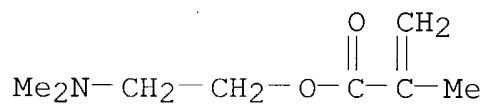
CMF C9 H15 N O2



CM 5

CRN 2867-47-2

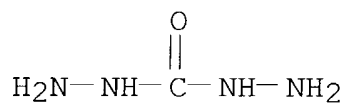
CMF C8 H15 N O2



CM 6

CRN 497-18-7

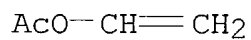
CMF C H6 N4 O



CM 7

CRN 108-05-4

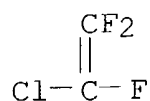
CMF C4 H6 O2



CM 8

CRN 79-38-9

CMF C2 Cl F3



RN 312715-24-5 HCA

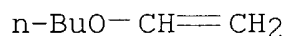
CN tert-Decanoic acid, ethenyl ester, polymer with carbonic dihydrazide, chlorotrifluoroethene, N-(1,1-dimethyl-3-oxobutyl)-2-propenamide, N,N-dimethyl-2-propen-1-amine, 1-(ethenyloxy)butane, (ethenyloxy)butanol, 2,2'-[1,6-hexanediylbis(oxyethylene)]bis[oxirane], α -methyl- ω -(2-propenyloxy)poly(oxy-1,2-ethanediyl) and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

CM 1

CRN 42978-84-7

CMF C6 H12 O2

CCI IDS



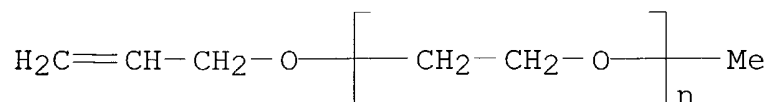
D1-OH

CM 2

CRN 27252-80-8

CMF (C2 H4 O)_n C4 H8 O

CCI PMS

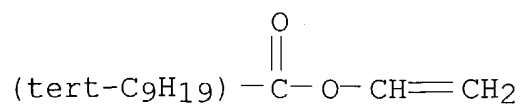


CM 3

CRN 26544-09-2

CMF C12 H22 O2

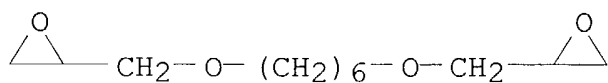
CCI IDS



CM 4

CRN 16096-31-4

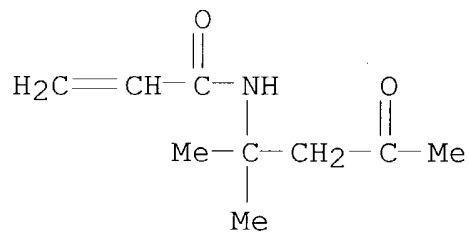
CMF C12 H22 O4



CM 5

CRN 2873-97-4

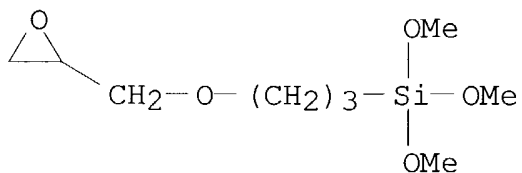
CMF C9 H15 N O2



CM 6

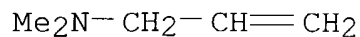
CRN 2530-83-8

CMF C9 H20 O5 Si



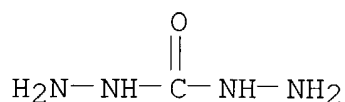
CM 7

CRN 2155-94-4
CMF C5 H11 N



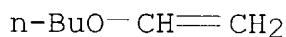
CM 8

CRN 497-18-7
CMF C H6 N4 O



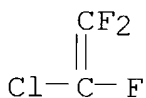
CM 9

CRN 111-34-2
CMF C6 H12 O



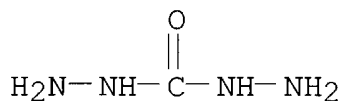
CM 10

CRN 79-38-9
CMF C2 Cl F3



- IC ICM C08L027-12
ICS C08G059-20; C08G059-40; C08K005-24; C08L055-00; C08L101-02;
C09D127-12; C08F290-06
- CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 37
- IT **Coating materials**
(antifouling; prepn. of water-based curable resin compn. and coated material with water-, weather-, and fouling-resistance)
- IT **Coating materials**
(dispersion, water-thinned; prepn. of water-based curable resin compn. and coated material with water-, weather-, and

- fouling-resistance)
- IT **Coating materials**
(water-resistant; prepn. of water-based curable resin compn. and coated material with water-, weather-, and fouling-resistance)
- IT **Coating materials**
(weather-resistant; prepn. of water-based curable resin compn. and coated material with water-, weather-, and fouling-resistance)
- IT 312715-21-2P 312715-22-3P **312715-23-4P**
312715-24-5P
(prepn. of water-based curable resin compn. and coated material with water-, weather-, and fouling-resistance)
- L93 ANSWER 6 OF 34 HCA COPYRIGHT 2004 ACS on STN
132:196000 Formaldehyde-absorbing decorative paper and its **laminates**. Murata, Kahei; Tominaga, Takafumi (Toppan Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000071393 A2 20000307, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-243497 19980828.
- AB The decorative paper consists of a paper substrate contg. **or coated** or impregnated with HCHO absorbers, a pattern **layer**, and a top **coat** contg. HCHO absorbers. Thus, reinforced paper was **coated** with a melamine-based HCHO absorber on the back side, gravure-printed with an aq. acrylic ink on the opposite side, further **coated** with a thermosetting acrylic **coating** contg. carbohydrazide, and dried to give decorative paper, which was **laminated** on a medium-d. fiberboard via an **adhesive** to show reduced HCHO release compared with a control not contg. carbohydrazide in the top **coat**.
- IT **497-18-7**, Carbohydrazide
(formaldehyde absorber; formaldehyde-absorbing decorative paper and its **laminates**)
- RN 497-18-7 HCA
- CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



- IC ICM B32B027-18
ICS A61L009-16; B32B027-30; B32B027-40; B32B029-06; B32B033-00;
D21H021-14; D21H027-20; E04F013-00
- CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 38, 42, 58, 59
- ST formaldehyde absorbing decorative paper **coating** hydrazide
- IT Construction materials

- (decorative boards; formaldehyde-absorbing decorative paper and its **laminates**)
- IT Paper
(decorative; formaldehyde-absorbing decorative paper and its **laminates**)
- IT Amides, reactions
(formaldehyde absorber; formaldehyde-absorbing decorative paper and its **laminates**)
- IT Indoor air pollution
(prevention of; formaldehyde-absorbing decorative paper and its **laminates**)
- IT Acrylic polymers, uses
Polyurethanes, uses
(top **coats**; formaldehyde-absorbing decorative paper and its **laminates**)
- IT **Coating materials**
(**topcoats**; formaldehyde-absorbing decorative paper and its **laminates**)
- IT 57-13-6, Urea, reactions 108-78-1, Melamine, reactions
497-18-7, Carbohydrazide
(formaldehyde absorber; formaldehyde-absorbing decorative paper and its **laminates**)
- IT 50-00-0, Formaldehyde, reactions
(formaldehyde-absorbing decorative paper and its **laminates**)

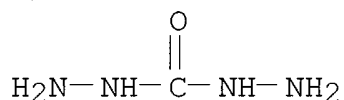
L93 ANSWER 7 OF 34 HCA COPYRIGHT 2004 ACS on STN

132:23669 Manufacture of surface treating articles with an expansive **adhesive**. Close, Thomas E. (3M Innovative Properties Company, USA). U.S. US 5996167 A 19991207, 11 pp. (English). CODEN: USXXAM. APPLICATION: US 1995-559333 19951116.

AB Title article comprises a rotatable core having an outer surface, a plurality of surface treating segments having first ends adjacent the core and second ends opposite the first ends, a cured, expanded **adhesive** compn. bonding the surface treating segment to the core, wherein the **adhesive** compn. comprises (a) an org. **epoxide** compd. having ≥ 1 **epoxide** functionality, (b) an **epoxide** hardener, (c) a **film**-forming material selected from the group consisting of butadiene-nitrile rubber, carboxylated butadiene-nitrile rubber, carboxy-terminated butadiene-nitrile rubber, amine-terminated butadiene-nitrile rubber, polyether diamines, polyhydroxyethers, graft polymers having a rubbery polyacrylate core with a polyacrylate or polymethacrylate shell, polyvinyl acetals, and mixts. thereof, and (d) a foaming agent selected from the group consisting of azobisisobutyronitriles, azodicarbonamides, carbazides, hydrazides, non-azo chem. blowing agents based on sodium borohydride or sodium bicarbonate/citric acid,

dinitrosopentamethylenetetramines, liquefied gases encapsulated in a polymeric thermoplastic shell, and mixts. thereof. Thus a flap brush construction was made by applying a single **layer** of 100 mil (2.5 mm) thick expandable **adhesive sheet** (Scotch-weld Structural Core Splice **Adhesive** AF-3024) to the periphery of a 20.3 cm long section of a glass-reinforced composite core of outer diam. 3.6 cm and inner diam. 2.5 cm, then simultaneously radially pressing 72 rectangular strips of lofty, 3-dimensional nonwoven abrasive material (Scotch-Brite Type A-Medium Clean and Finish) of 5.1 mm thickness, 3.5 cm width, and slightly less than 20.3 cm length onto the **adhesive sheet** surrounding the core.

IT **497-18-7D**, Carbazide, derivs.
 (foaming agent; manuf. of surface treating articles with expansive **adhesive**)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)

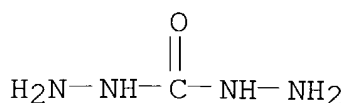


IC ICM B44D005-00
 ICS B24B009-02
 NCL 015230120
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 39, 40
 ST expansive **adhesive** surface treating article prepn;
epoxide butadiene nitrile rubber foaming agent
adhesive
 IT Crosslinking agents
 Foaming agents
 (adhesive contg.; manuf. of surface treating articles with expansive **adhesive**)
 IT **Epoxy** resins, uses
 Nitrile rubber, uses
 Polyvinyl acetals
 (adhesive contg.; manuf. of surface treating articles with expansive **adhesive**)
 IT Phenoxy resins
 (adhesive contg.; manuf. of surface treating articles with expansive **adhesive**)
 IT Nitrile rubber, uses
 (amine-terminated, **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
 IT Nitrile rubber, uses
 (carboxy-contg., **adhesive** contg.; manuf. of surface

- treating articles with expansive **adhesive**)
- IT Nitrile rubber, uses
(carboxy-terminated, **adhesive** contg.; manuf. of surface
treating articles with expansive **adhesive**)
- IT Wood
(core; manuf. of surface treating articles with expansive
adhesive)
- IT Metals, uses
(core; manuf. of surface treating articles with expansive
adhesive)
- IT Polyethers, uses
(diamine, **adhesive** contg.; manuf. of surface treating
articles with expansive **adhesive**)
- IT Polyurethanes, uses
Polyurethanes, uses
(epoxy, **adhesive** contg.; manuf. of surface
treating articles with expansive **adhesive**)
- IT Hydrazides
(foaming agent; manuf. of surface treating articles with
expansive **adhesive**)
- IT Polyethers, uses
(hydroxy-contg., **adhesive** contg.; manuf. of surface
treating articles with expansive **adhesive**)
- IT Gases
(liquefied, foaming agent; manuf. of surface treating articles
with expansive **adhesive**)
- IT **Adhesives**
(manuf. of surface treating articles with expansive
adhesive)
- IT **Epoxy** resins, uses
Epoxy resins, uses
(polyurethane-, **adhesive** contg.; manuf. of
surface treating articles with expansive **adhesive**)
- IT Ceramics
Nonwoven fabrics
Paper
Textiles
(surface treating segment; manuf. of surface treating articles
with expansive **adhesive**)
- IT Fibers
Polymers, uses
Urethane rubber, uses
(surface treating segment; manuf. of surface treating articles
with expansive **adhesive**)
- IT Plastics, uses
(thermoplastics, core; manuf. of surface treating articles with
expansive **adhesive**)
- IT Plastics, uses

- (thermosetting, core; manuf. of surface treating articles with expansive **adhesive**)
- IT 79-10-7D, Acrylic acid, esters, graft polymers 79-41-4D, Methacrylic acid, esters, graft polymers
(**adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- IT 75-28-5, Isobutane 77-92-9, uses 78-67-1, Azobisisobutyronitrile 101-25-7, Dinitrosopentamethylenetetramine 123-77-3, Azodicarbonamide 144-55-8, Sodium bicarbonate, uses **497-18-7D**, Carbazide, derivs. 16940-66-2, Sodium borohydride
(foaming agent; manuf. of surface treating articles with expansive **adhesive**)
- IT 461-58-5, Dicyandiamide 17526-94-2
(hardener, **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- IT 9003-18-3
(nitrile rubber, **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- IT 9003-18-3
(nitrile rubber, amine-terminated, **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- IT 9003-18-3
(nitrile rubber, carboxy-contg., **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- IT 9003-18-3
(nitrile rubber, carboxy-terminated, **adhesive** contg.; manuf. of surface treating articles with expansive **adhesive**)
- L93 ANSWER 8 OF 34 HCA COPYRIGHT 2004 ACS on STN
- 130:298065 Formaldehyde-trapping **layer**-containing decorative materials for wood bases. Tominaga, Takashi; Masuko, Kazuya; Kato, Kazuteru (Toppan Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11105229 A2 19990420 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-274425 19971007.
- AB Title materials contain **topcoats covered** on HCHO-trapping **layers**. The back side of a reinforced paper **sheet** was **coated** with Daimushu Form (a HCHO trapper), ink-printed, and **topcoated** with a clear **polyurethane** compn., then press **laminated** (on the top side) with a MDF board through an **adhesive** to form a decorative panel with releasing HCHO content 2.4 mg/L, vs. 4.8 mg/L for the MDF board.
- IT **497-18-7**, Carbohydrazide
(HCHO trapper; HCHO-trapper **layer**-contg. wood-based

decorative panels with resin **topcoats**)
RN 497-18-7 HCA
CN Carbonic dihydrazide (9CI) (CA INDEX NAME)

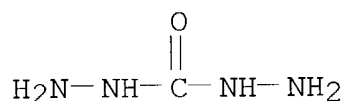


IC ICM B32B033-00
ICS B05D001-36; B05D005-00; B05D007-00; B32B021-06; B32B027-00;
B32B027-18; E04F013-08
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 43
ST wood board decorative panel formaldehyde trapper resin
topcoat
IT Amides, uses
Amines, uses
Amino acids, uses
Aminoplasts
Hydrazides
(HCHO trapper; HCHO-trapper **layer**-contg. wood-based
decorative panels with resin **topcoats**)
IT Fiberboards
(HCHO-trapper **layer**-contg. wood-based decorative panels
with resin **topcoats**)
IT Acrylic polymers, uses
Polyurethanes, uses
(HCHO-trapper **layer**-contg. wood-based decorative panels
with resin **topcoats**)
IT Construction materials
(decorative boards; HCHO-trapper **layer**-contg.
wood-based decorative panels with resin **topcoats**)
IT **Coating materials**
(**topcoats**; HCHO-trapper **layer**-contg.
wood-based decorative panels with resin **topcoats**)
IT 461-58-5 **497-18-7**, Carbohydrazide 1071-93-8, Adipic acid
dihydrazide 9003-08-1, Melamine resin 223419-89-4, Daimushew
Form
(HCHO trapper; HCHO-trapper **layer**-contg. wood-based
decorative panels with resin **topcoats**)

L93 ANSWER 9 OF 34 HCA COPYRIGHT 2004 ACS on STN ✓
126:294242 Resin hardeners containing dihydrazides and curable resin
compositions containing them. Kamyu, Kazusaki; Kitajima, Takashi;
Hayashi, Hiroyasu; Maekawa, Tsukasa (Otsuka Kagaku KK, Japan; Otsuka
Chemical Holdings Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 09067466 A2
19970311 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP

1995-226485 19950904.

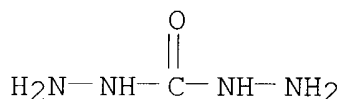
- AB The resin hardeners contain ≥ 1 dihydrazides
 $R_2C:NNHCOXCONHN:CR_2$ ($R = H, \text{halo}, C1-4 \text{ alkyl}, C1-4 \text{ alkoxy}, \text{aryl}; R$
 may differ; CR_2 may form a cycloalkyl ring; $X = \text{alkylene}, \text{oxo},$
 arylene) as active ingredients. The resin compns., esp. for
adhesives and **coatings**, contg. the hardeners have
 a long pot life. Me₂CO was treated with adipic acid dihydrazide
 under heat to give Me₂C:NNHCO(CH₂)₄CONHN:CMe₂ (I). Epo Tohto YD 128
 (**epoxy** resin) (100 parts) was mixed with 10 parts I and
 heated at 120° to show gelling time of 50 min. The cured
 product showed good transparency and flexibility.
- IT **497-18-7**, Carbohydrazide
 (prepn. of dihydrazides as hardeners for curable resin compns.
 with long pot life)
- RN 497-18-7 HCA
- CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



- IC ICM C08K005-25
 ICS C08G059-40; C08L029-04; C08L033-06; C08L061-20; C08L101-00
- CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 42
- ST dihydrazide hardener **epoxy** resin pot life;
adhesive coating epoxy resin hardener
 dihydrazide
- IT **Adhesives**
Coating materials
 Crosslinking agents
 (prepn. of dihydrazides as hardeners for curable resin compns.
 with long pot life)
- IT **Epoxy** resins, uses
 (prepn. of dihydrazides as hardeners for curable resin compns.
 with long pot life)
- IT 67-64-1, Acetone, reactions **497-18-7**, Carbohydrazide
 1071-93-8, Adipic acid dihydrazide
 (prepn. of dihydrazides as hardeners for curable resin compns.
 with long pot life)
- L93 ANSWER 10 OF 34 HCA COPYRIGHT 2004 ACS on STN
 125:13565 Aqueous printing inks for packaging materials. Matura,
 Takeaki; Marui, Makoto; Ohashi, Masato (Toyo Ink Mfg Co, Japan).
 Jpn. Kokai Tokkyo Koho JP 08053641 A2 19960227 Heisei, 8
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-190245 19940812.
- AB Title inks giving images with good heat and water resistance and

contg. aq. **polyurethanes** as **binders** having 5-180 mequiv (vs. 100 g resin) ionic groups and ≤20% polyethylene units prepd. from isocyanate-reactive compds. with ≥1 ionic group and ≥2 isocyanate-reactive groups, polyoxyethylene compds., org. **polyisocyanates**, polyhydrazides, and polyamines are used for printing on plastic **films** or Al. Thus, poly(3-methyl-1,5-pentanediyol adipate) diol 107.2, 2,2-dimethylpropionic acid 28.7, PEG 14.9, IPDI 110.0, adipic acid dihydrazide 13.3, and isophoronediamine 25.9 parts were mixed and treated at 50° for 3 h to give a **urethane** soln., 70 parts of which was mixed with 18 parts Blue pigment and used for gravure printing on a polypropylene **film** to give a test piece showing good substrate **adhesion** and heat and water resistance.

IT **497-18-7DP**, Carbonic dihydrazide, reaction products with polyols, **polyisocyanates**, and spirodiamines
(aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
RN 497-18-7 HCA
CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



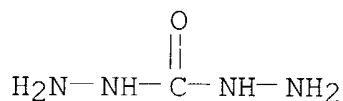
IC ICM C09D011-02
ICS C09D175-04
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 56
ST heat water resistance aq ink; isocyanate polyoxyethylene **urethane** polymer ink; polyhydrazide polyamine **polyurethane** packaging ink; polyurea **polyurethane** ink packaging; ionic group contg **polyurethane** ink packaging; polyester **polyurethane** ink packaging; methylpentanediol **polyurethane** ink packaging; adipic acid dihydrazide **polyurethane** ink packaging; isophoronediamine **polyurethane** ink packaging; polypropylene packaging **film polyurethane** ink; aluminum **foil** packaging **polyurethane** ink; dimethylolpropionic acid **polyurethane** ink packaging; polyadipate **polyurethane** ink packaging
IT Packaging materials
(aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
IT Water-resistant materials
(heat-resistant, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)

- IT **Urethane** polymers, uses
(polycarbonate-polyhydrazide-polyoxyalkylene-polyurea-, block, diols, reaction products with **polyisocyanates**, polyhydrazines, and polyamines; aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyureas
(polycarbonate-polyhydrazide-polyoxyalkylene-**polyurethane** -, block, diols, reaction products with **polyisocyanates**, polyhydrazines, and polyamines; aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyoxyalkylenes, uses
(polycarbonate-polyhydrazide-polyurea-**polyurethane**-, block, diols, reaction products with **polyisocyanates**, polyhydrazines, and polyamines; aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyhydrazides
(polycarbonate-polyoxyalkylene-polyurea-**polyurethane**-, block, diols, reaction products with **polyisocyanates**, polyhydrazines, and polyamines; aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT **Urethane** polymers, uses
(polyester-polyhydrazide-polyoxyalkylene-polyurea-, block, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyureas
(polyester-polyhydrazide-polyoxyalkylene-**polyurethane**-, block, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyoxyalkylenes, uses
(polyester-polyhydrazide-polyurea-**polyurethane**-, block, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyhydrazides
(polyester-polyoxyalkylene-polyurea-**polyurethane**-, block, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT **Urethane** polymers, uses
(polyhydrazide-polyoxyalkylene-polyurea-, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)
- IT Polyesters, uses
(polyhydrazide-polyoxyalkylene-polyurea-**polyurethane**-, block, aq. printing inks contg. **polyurethanes** having ionic groups for packaging materials)

- IT Polycarbonates, uses
(polyhydrazide-polyoxyalkylene-polyurea-**polyurethane-**,
block, diols, reaction products with **polyisocyanates**,
polyhydrazines, and polyamines; aq. printing inks contg.
polyurethanes having ionic groups for packaging
materials)
- IT Polyureas
(polyhydrazide-polyoxyalkylene-**polyurethane-**, aq.
printing inks contg. **polyurethanes** having ionic groups
for packaging materials)
- IT Polyoxyalkylenes, uses
(polyhydrazide-polyurea-**polyurethane-**, aq. printing
inks contg. **polyurethanes** having ionic groups for
packaging materials)
- IT Polyhydrazides
(polyoxyalkylene-polyurea-**polyurethane-**, aq. printing
inks contg. **polyurethanes** having ionic groups for
packaging materials)
- IT Inks
(printing, water-thinned, aq. printing inks contg.
polyurethanes having ionic groups for packaging
materials)
- IT Heat-resistant materials
(water-resistant, aq. printing inks contg. **polyurethanes**
having ionic groups for packaging materials)
- IT **497-18-7DP**, Carbonic dihydrazide, reaction products with
polyols, **polyisocyanates**, and spirodiamines
25248-42-4DP, Polycaprolactone, diol derivs., reaction products with
adipic acid dihydrazide, polyethylene glycol, isophoronediamine, and
IPDI 25322-69-4DP, Poly(propylene glycol), reaction products with
polyisocyanates, polyhydrazides, and spirodiamines
177587-98-3P 177587-99-4P
(aq. printing inks contg. **polyurethanes** having ionic
groups for packaging materials)
- IT 7429-90-5, Aluminum, miscellaneous 9002-88-4, Polyethylene
9003-07-0, Polypropylene
(substrates; aq. printing inks contg. **polyurethanes**
having ionic groups for packaging materials)
- L93 ANSWER 11 OF 34 HCA COPYRIGHT 2004 ACS on STN
123:342650 Manufacture of cells for liquid crystals using
rubber-containing **epoxy** resins. Tawara, Shuji; Makino,
Shigeo; Itami, Seiji; Horiuchi, Masayuki (Mitsui Toatsu Chemicals,
Japan). Jpn. Kokai Tokkyo Koho JP 07109405 A2 19950425 Heisei, 10
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-258270
19931015.
- AB The cells are manufd. at low temp. in a short time by using compns.
contg. **epoxy** resins, hardeners, hardening accelerators,

rubbers, coupling agents, fillers, and solvents as **adhesives**. Specific hardeners and accelerators are claimed. Thus, Epiclon 830S 600, acrylic acid 12, and Et3N 1 part were treated at 110° for 5 h and further treated with Bu acrylate 350, glycidyl methacrylate 20, and divinylbenzene 1 part at 70° for 3 h and at 90° for 1 h in presence of azobisdimethylvaleronitrile and AIBN to give a graft polymer (**epoxy** equiv. 305 g/equiv, 37.9% rubber), 20 parts of which was blended with bisphenol F-epichlorohydrin copolymer 100, adipic acid dihydrazide hardener 20, 3-p-chlorophenyl-1,1-dimethylurea accelerator 2, a glycidylsilane-type coupling agent 3, Al2O3 20, and Aerosil 5 parts, kneaded, applied on a glass substrate in a pattern, dried, **covered** with a glass plate, and treated at 120° for 60 min to give a cell showing **adhesion** 248 kg/cm2 initially and 238 after 5-h in boiling water.

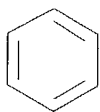
IT 497-18-7, Carbodihydrazide
 (crosslinking agents; **epoxy** resin **adhesives**
 for manuf. of liq. crystal cells at low temp. in a short time)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



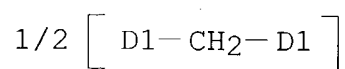
IT 170424-31-4P
 (**epoxy** resin **adhesives** for manuf. of liq.
 crystal cells at low temp. in a short time)
 RN 170424-31-4 HCA
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with
 butyl 2-propenoate, carbonic dihydrazide, (chloromethyl)oxirane,
 (chloromethyl)oxirane polymer with methylenebis[phenol]
 2-propenoate, diethenylbenzene, methylenebis[phenol] and
 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1333-16-0
 CMF C13 H12 O2
 CCI IDS



D1-OH

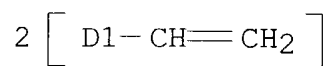
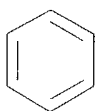


CM 2

CRN 1321-74-0

CMF C10 H10

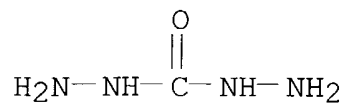
CCI IDS



CM 3

CRN 497-18-7

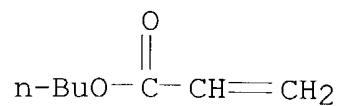
CMF C H6 N4 O



CM 4

CRN 141-32-2

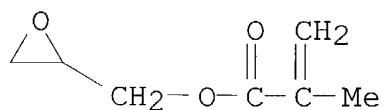
CMF C7 H12 O2



CM 5

CRN 106-91-2

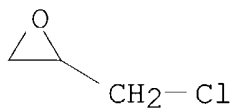
CMF C7 H10 O3



CM 6

CRN 106-89-8

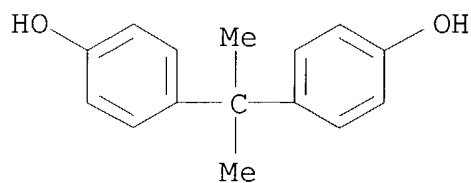
CMF C3 H5 Cl O



CM 7

CRN 80-05-7

CMF C15 H16 O2



CM 8

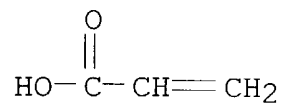
CRN 86752-95-6

CMF (C13 H12 O2 . C3 H5 Cl O)x . x C3 H4 O2

CM 9

CRN 79-10-7

CMF C3 H4 O2



CM 10

CRN 58421-55-9

CMF (C13 H12 O2 . C3 H5 Cl O)x

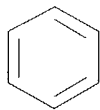
CCI PMS

CM 11

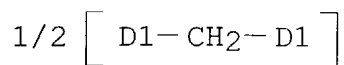
CRN 1333-16-0

CMF C13 H12 O2

CCI IDS



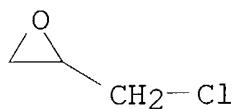
D1-OH



CM 12

CRN 106-89-8

CMF C3 H5 Cl O



- IC ICM C08L063-00
ICS C08G059-40; G02F001-1339
- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 75
- ST liq crystal cell manuf **epoxy adhesive**; adipic
hydrazide hardener **epoxy resin adhesive**; acrylic
epoxy adhesive water resistance;
chlorophenyldimethylurea accelerator **epoxy
adhesive**
- IT Rubber, silicone, uses
(**adhesive** component; **epoxy resin
adhesives** for manuf. of liq. crystal cells at low temp.
in a short time)
- IT **Adhesives**
(**epoxy resin adhesives** for manuf. of liq.
crystal cells at low temp. in a short time)
- IT **Epoxy resins**, uses
(**epoxy resin adhesives** for manuf. of liq.
crystal cells at low temp. in a short time)
- IT **Epoxy resins**, uses
(acrylic, **epoxy resin adhesives** for manuf. of
liq. crystal cells at low temp. in a short time)
- IT Optical imaging devices
(liq.-crystal, **epoxy resin adhesives** for
manuf. of liq. crystal cells at low temp. in a short time)
- IT Siloxanes and Silicones, uses
(methoxy, reaction products, with acrylic **epoxy resins**;
epoxy resin adhesives for manuf. of liq.
crystal cells at low temp. in a short time)
- IT 158536-11-9P 170422-58-9DP, polymers with methoxy-contg. silicones
(**adhesive** component; **epoxy resin
adhesives** for manuf. of liq. crystal cells at low temp.
in a short time)
- IT **497-18-7**, Carbodihydrazide 1071-93-8, Adipic acid
dihydrazide
(crosslinking agents; **epoxy resin adhesives**
for manuf. of liq. crystal cells at low temp. in a short time)
- IT 170424-30-3P **170424-31-4P** 170424-32-5P 170900-23-9P
(**epoxy resin adhesives** for manuf. of liq.
crystal cells at low temp. in a short time)
- IT 101-42-8, 3-Phenyl-1,1-dimethylurea 150-68-5, 3-p-Chlorophenyl-1,1-
dimethylurea
(hardening accelerators; **epoxy resin adhesives**
for manuf. of liq. crystal cells at low temp. in a short time)

L93 ANSWER 12 OF 34 HCA COPYRIGHT 2004 ACS on STN

123:202280 Water-based coating compositions containing polyhydrazines.
Mihoya, Takashi; Fujimatsu, Shinya; Utsugi, Masaki; Iibuchi, Koichi

(Toyo Ink Mfg Co, Japan). Jpn. Kokai Tokkyo Koho JP 07034008 A2 19950203 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-176845 19930716.

AB The title coatings with good storage stability, water resistance, pigment dispersibility, and **adhesion** to substrates comprise 100 g water-based resins and 0.04-80 mequiv polyhydrazine compds. Thus, heating at 80° of a mixt. of poly(butylene adipate) glycol with OH value 56 mg KOH/g 66.5, polyethylene glycol with OH value 56 g KOH/g 7.5, dimethylolpropionic acid 14.3, and MEK 90 parts, adding dropwise 47.9 parts IDPI, a soln. of 10 parts MEK contg. 0.015 part dibutyltin dilaurate, treating for 3 h to give a NCO-terminated prepolymer, cooling to ≤30°, adding dropwise a mixt. of isophoronediamine 11.9, dibutylamine 1.8, and acetone 200 parts, heating to 50° for chain extension reaction, neutralizing by NH₃ soln., and treating at 60° and reduced pressure for solvent removal gave a 30.1% nonvolatile polyurethane water dispersion with acid value before neutralization 39.8 mg KOH/g and pH 6.8, 50 parts of which was blended with 1.5 part 5.0% adipic acid dihydrazide soln., 5-μm thickness applied to 125-μm thickness PET film, and dried at 70° for 2 h to give test pieces with good water resistance and **adhesion**.

IT 168266-07-7P

(water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

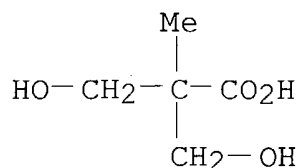
RN 168266-07-7 HCA

CN Hexanedioic acid, polymer with 5-amino-1,3,3-trimethylcyclohexanemethanamine, 1,4-butanediol, carbonic dihydrazide, 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoic acid, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane and oxirane (9CI) (CA INDEX NAME)

CM 1

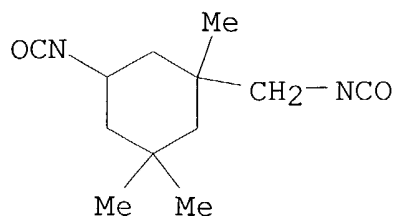
CRN 4767-03-7

CMF C5 H10 O4



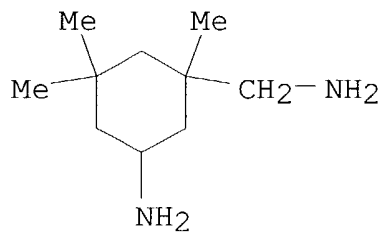
CM 2

CRN 4098-71-9
CMF C12 H18 N2 O2



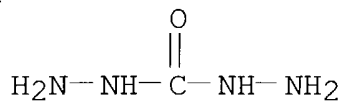
CM 3

CRN 2855-13-2
CMF C10 H22 N2



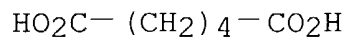
CM 4

CRN 497-18-7
CMF C H6 N4 O



CM 5

CRN 124-04-9
CMF C6 H10 O4



CM 6

CRN 110-63-4

CMF C4 H10 O2

HO- (CH₂)₄-OH

CM 7

CRN 75-21-8

CMF C2 H4 O



IC ICM C09D005-00

ICS C09D175-04; C09D201-00

CC 42-7 (Coatings, Inks, and Related Products)

IT **Coating materials**

(water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT Polyesters, uses

(water-based coatings with storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT Urethane polymers, uses

(polyester-polyether-, water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT Urethane polymers, uses

(polyester-polyoxyalkylene-, block, water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT 9003-07-0, Polypropylene

(corona-treated films; water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT 7429-90-5, Aluminum, miscellaneous

(plates; water-based coatings with good storage stability, water

resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT 25038-59-9, PET, miscellaneous
(substrates; water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT 168084-00-2P 168084-01-3P 168266-06-6P **168266-07-7P**
(water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

IT 168084-02-4 168084-03-5
(water-based coatings with good storage stability, water resistance, pigment dispersibility, gloss, and **adhesion** to substrates comprising water-based resins and polyhydrazine compds.)

L93 ANSWER 13 OF 34 HCA COPYRIGHT 2004 ACS on STN

123:146835 Waterborne vinyl resin/**polyurethane** paint with weather and water resistance. Mori, Makoto; Nishida, Reijiro; Takaya, Yasuo; Nakaya, Yasuharu; Sugishima, Masami (Kansai Paint Co., Ltd., Japan). Eur. Pat. Appl. EP 648794 A1 19950419, 17 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1994-307562 19941014. PRIORITY: JP 1993-289700 19931015.

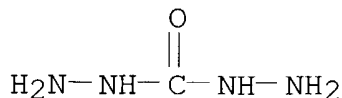
AB The title compn., crosslinkable at ambient temp. and suitable for painting interiors and exteriors of buildings, bridges, vehicles et al, which is non odored, as well as hygienic is obtained by blending an aq. dispersion of a carbonyl group-contg. copolymer (A) with a carbonyl group-contg. aq. acrylic **polyurethane** resin (B) (100:5-150), and then adding a crosslinking agent hydrazide compd. (C) having ≥ 2 hydrazide groups/mol. at the C/A + B ratio 0.01-2 mol/ mol. (of carbonyl group). A coating compn. contg. acrylic acid-Bu acrylate-diacetone acrylamide-2-ethylhexyl acrylate-Me methacrylate-styrene copolymer emulsion (prepn. given; 51.2 solids; diam. 0.06 μm) 470, aq. diacetone acrylamide-2,2-dimethylolpropionic acid-hydroxyethyl methacrylate-IPDI-polycaprolactone diol-polypropylene glycol copolymer (prepn. given; acid no. 20) dispersion 232, adipic dihydrazide crosslinker 0.75 parts mixed with pigment **grind** and solvent at hydrazide/carbonyl ratio 0.1 and solids content 52% was applied onto primered bonded plates and dried 20°/relative humidity 75% to give paints having water resistance and gloss retention (Sunshine weather-o-meter 1500 h) 78%.

IT **497-18-7**, Carbonohydrazide

(crosslinker; in compn. for waterborne vinyl resin/
polyurethane paint with weather and water resistance)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM C08G018-67

ICS C08G018-83

CC 42-7 (Coatings, Inks, and Related Products)

ST water resistance waterborne paint; weather resistance waterborne paint; polyvinyl **polyurethane** waterborne paint ambient curable

IT **Urethane** polymers, uses

(acrylic, hydroxy group-contg.; in compn. for waterborne vinyl resin/**polyurethane** paint with weather and water resistance)

IT **Coating materials**

(water-thinned, weather-resistant, in compn. for waterborne vinyl resin/**polyurethane** paint with weather and water resistance)

IT 136-64-1, Terephthalic acid bishydrazide **497-18-7**,

Carbonohydrazide 1071-93-8, Adipic dihydrazide

(crosslinker; in compn. for waterborne vinyl resin/
polyurethane paint with weather and water resistance)

IT 868-77-9D, **polyurethane** adduct 2873-97-4D, Diacetone

acrylamide, **polyurethane** adduct 4098-71-9D, IPDI,

polyurethane adduct 4767-03-7D, 2,2-Dimethylolpropionic

acid, **polyurethane** adduct 24980-41-4D, Polycaprolactone,

diol deriv., **polyurethane** adduct 25248-42-4D,

Polycaprolactone, diol deriv., **polyurethane** adduct

25322-69-4D, Polypropylene glycol, **polyurethane** adduct

146921-25-7 155634-30-3

(in compn. for waterborne vinyl resin/**polyurethane**
 paint with weather and water resistance)

L93 ANSWER 14 OF 34 HCA COPYRIGHT 2004 ACS on STN

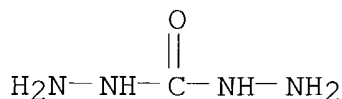
123:85460 Epoxy-**polyketone** polymer composite system.

Weinkauff, Donald H.; Ash, Carlton E. (Shell Oil Co., USA). U.S. US
 5405700 A 19950411, 4 pp. (English). CODEN: USXXAM APPLICATION:
 US 1993-166136 19931213.

AB The composite with improved interfacial bonding comprises a
 substrate having ≥ 1 surface to which a multifunctional amine
 is covalently bonded, and an epoxy resin layer bonded to the
 substrate surface through the amine, wherein the substrate comprises

a copolymer of CO and ≥ 1 unsatd. hydrocarbon.

- IT 497-18-7, Carbohydrazide
 (epoxyresin-**polyketone** polymer composites with improved
 interfacial bonding)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)

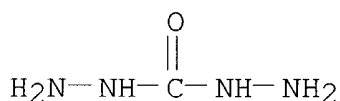


- IC ICM B32B027-38
 NCL 428413000
 CC 38-3 (Plastics Fabrication and Uses)
 ST epoxy resin **polyketone** composite; interfacial bonding
 epoxy resin **polyketone**; carbon monoxide based
polyketone composite
 IT Amines, uses
 (epoxyresin-**polyketone** polymer composites with improved
 interfacial bonding)
 IT Epoxy resins, uses
 (epoxyresin-**polyketone** polymer composites with improved
 interfacial bonding)
 IT Polyethers, uses
 (amino-contg., diamines; epoxyresin-**polyketone** polymer
 composites with improved interfacial bonding)
 IT **Polyketones**
 (carbon monoxide-based, epoxyresin-**polyketone** polymer
 composites with improved interfacial bonding)
 IT 107-15-3, Ethylenediamine, uses 111-40-0, Diethylenetriamine
 111-41-1 112-24-3, Triethylenetetramine 497-18-7,
 Carbohydrazide 504-75-6, Imidazoline 1071-93-8, Adipic acid
 dihydrazide 2855-13-2, Isophorone diamine 28631-79-0,
 Aminoethylpiperazine
 (epoxyresin-**polyketone** polymer composites with improved
 interfacial bonding)
 IT 25068-38-6, Epon 828
 (epoxyresin-**polyketone** polymer composites with improved
 interfacial bonding)

- L93 ANSWER 15 OF 34 HCA COPYRIGHT 2004 ACS on STN
 122:292769 Two-component water-resistant fast-curing **adhesives**
 . Shima, Shuji; Kuwako, Nobuteru (Koyo Sangyo Co, Japan). Jpn.
 Kokai Tokkyo Koho JP 06256748 A2 19940913 Heisei, 5 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1993-72887 19930309.
 AB The title **adhesives**, useful for bonding wood, inorg.
 materials, paper, etc., comprise a component contg. isocyanates and

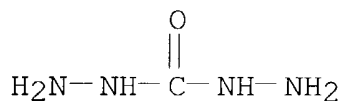
aq. acetoacetyl group-contg. polymer solns. and/or emulsions and a component contg. aq. solns. or dispersions contg. hydrazines, aldehydes, and/or polyethylenimine as well as glycidylamino group-contg. **epoxy** resins. Applying a soln. contg. Gohsefimer Z 200, butadiene-styrene copolymer latex, CaCO₃, and **diisocyanatodiphenylmethane** on a wood surface, applying a soln. contg. carbodihydrazide, TETRD X, isooctyl acetate, and a lubricant on another wood surface, and pressing the **coated** surfaces together for 72 h gave shear strength 200 kg/cm² initially and 85 kg/cm² after contact with boiling H₂O.

IT 497-18-7, Carbodihydrazide
 (in two-component water-resistant **adhesives** contg. glycidylamine resin)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM C09J175-04
 ICS C09J175-04
 ICA C08G018-58; C08G018-83
 CC 38-3 (Plastics Fabrication and Uses)
 ST **adhesive** glycidylamino resin water resistance; acetoacetyl group **epoxy adhesive** waterproofing; **epoxy** amine resin **adhesive** waterproofing
 IT Water-resistant materials
 (adhesives contg. acetoacetyl group-contg. polymers and glycidylamino resins)
 IT **Epoxy** resins, uses
 (glycidylamino; in two-component water-resistant **adhesives** contg. acetoacetyl group-contg. polymers)
 IT **Adhesives**
 (two-component water-resistant **adhesives** contg. acetoacetyl group-contg. polymers and glycidylamino resins)
 IT 31305-88-1 31305-94-9, Epikote 604 64020-73-1, TETRAD X 65992-67-8, TETRAD C
 (in two-component water-resistant **adhesives**)
 IT 101-68-8 107-22-2, Glyoxal 111-30-8, Glutaraldehyde 497-18-7, Carbodihydrazide 1071-93-8, Adipic dihydrazide 9002-98-6, Polyethylenimine 39290-68-1, Poly(vinyl alcohol) acetoacetate 163206-51-7, AD 100H 163206-52-8, AD 100R
 (in two-component water-resistant **adhesives** contg. glycidylamine resin)

- 121:111615 Aqueous dispersions of **polyurethane** resins and manufacture thereof. Takasu, Tetsuya; Kawachi, Yoji; Tanaka, Tadashi (Sanyo Chemical Ind Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06093068 A2 19940405 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-269516 19920910.
- AB **Polyurethanes** contg. carboxylic acid groups neutralized with tertiary amines are mixed with primary and/or secondary monoamines to free the tertiary amines which decrease the activity of acid catalysts during crosslinking of the **polyurethanes** by amino resins and need to be removed. Thus, a prepolymer was prepd. from a polycaprolactone diol, poly(3-methylpentane adipate) diol, 1,4-butanediol, trimethylolpropane, α,α -dimethylolpropionic acid, and IPDI, mixed with Et3N, emulsified in H2O, mixed with 2-amino-2-methyl-1-propanol, heated in vacuo to remove Et3N, and cured with Cymel 303 and p-toluenesulfonic acid to form a coating on a tin plate.
- IT **497-18-7D**, Carbonic dihydrazide, **polyurethanes**, carboxy group-contg., salts with aminomethylpropanol (aq. coatings, contg. melamine resins)
- RN 497-18-7 HCA
- CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



- IC ICM C08G018-00
- ICS C08G018-34; C08G018-48; C08G018-65; C08G018-83
- CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 55
- ST **polyurethane** melamine resin coating; carboxy **polyurethane** amine salt
- IT **Coating materials**
(aq., carboxy group-contg. **polyurethane** amine salts, contg. melamine resins)
- IT Chains, chemical
(extenders for, of **polyurethanes**, for aq. coatings)
- IT Crosslinking agents
(melamine resins, for carboxy group-contg. **polyurethane** amine salts, for coatings)
- IT **Urethane** polymers, uses
(carboxy-contg., amine salts, aq. coatings, contg. melamine resins)
- IT 77-99-6D, **polyurethanes**, carboxy group-contg., salts with aminomethylpropanol 110-63-4D, 1,4-Butanediol, **polyurethanes**, carboxy group-contg., salts with aminomethylpropanol 124-68-5D, 2-Amino-2-methyl-1-propanol, salts

with carboxy group-contg. **polyurethanes** 497-18-7D
, Carbonic dihydrazide, **polyurethanes**, carboxy
group-contg., salts with aminomethylpropanol 822-06-0D,
polyurethanes, carboxy group-contg., salts with
aminomethylpropanol 4098-71-9D, **polyurethanes**, carboxy
group-contg., salts with aminomethylpropanol 4767-03-7D,
polyurethanes, salts with aminomethylpropanol 5124-30-1D,
Hydrogenated MDI, **polyurethanes**, carboxy group-contg.,
salts with aminomethylpropanol 24980-41-4D, Polycaprolactone,
diols, **polyurethanes**, carboxy group-contg., salts with
aminomethylpropanol 25248-42-4D, Polycaprolactone, diols,
polyurethanes, carboxy group-contg., salts with
aminomethylpropanol 32492-61-8D, **polyurethanes**, carboxy
group-contg., salts with aminomethylpropanol 39751-34-3D,
polyurethanes, carboxy group-contg., salts with
aminomethylpropanol 58991-77-8D, Adipic acid-3-methyl-1,5-
pentanediol copolymer, SRU, **polyurethanes**, carboxy
group-contg., salts with aminomethylpropanol 156965-79-6
156965-82-1

(aq. coatings, contg. melamine resins)

IT 9003-08-1, Cymel 303

(crosslinking agents, for carboxy group-contg.

polyurethane amine salts, for coatings)

IT 111-42-2, Diethanolamine, reactions

(reaction of, with carboxy group-contg. **polyurethane**
triethylamine salts)

L93 ANSWER 17 OF 34 HCA COPYRIGHT 2004 ACS on STN

119:182046 Manufacture of polyurethane oil-in-water type dispersions.
Horai, Koji (Sanyo Chemical Ind Ltd, Japan). Jpn. Kokai Tokkyo Koho
JP 05086159 A2 19930406 Heisei, 7 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1991-276849 19910926.

AB Title dispersions with good yellowing prevention are manufd. by
stirring NCO-contg. urethane prepolymers obtained from aliph. or
alicyclic polyisocyanates, active H-contg. components, and
carbohydrazide (I) as a chain-extending agent in the presence of
H2O. Thus, Nippollan 980R (polycarbonate diol) 420.2, adduct of
4,4'-isopropylidenebisphenol-ethylene oxide 194.2,
dimethylolpropionic acid 35.8, and 4,4'-methylenebis(cyclohexyl
isocyanate) 350.0 parts were treated in MEK to give a
1.47%-NCO-contg. prepolymer, which was treated with 19.2 parts I in
H2O to give a polyurethane soln. Then, nylon fabrics were immersed
in the soln. and heated to give a test piece without yellowing.

IT 150528-37-3P 150528-38-4P

(prepn. of, oil-in-water dispersions, with good yellowing
prevention)

RN 150528-37-3 HCA

CN Propanoic acid, 3-hydroxy-2-(hydroxymethyl)-2-methyl-, polymer with

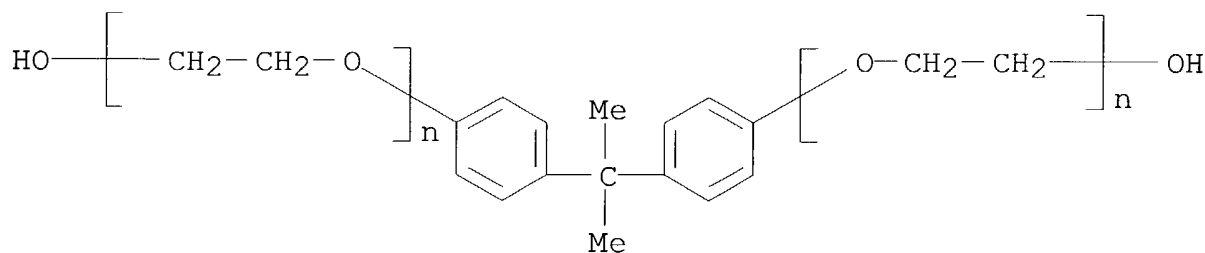
carbonic acid, carbonic dihydrazide, 1,6-hexanediol,
1,1'-methylenebis[4-isocyanatocyclohexane] and α, α' -[(1-
methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly(oxy-1,2-
ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 32492-61-8

CMF (C2 H4 O)n (C2 H4 O)n C15 H16 O2

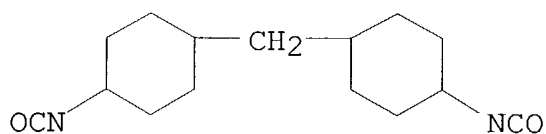
CCI PMS



CM 2

CRN 5124-30-1

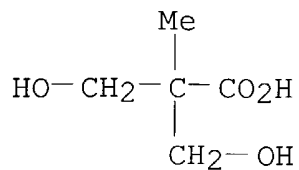
CMF C15 H22 N2 O2



CM 3

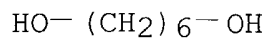
CRN 4767-03-7

CMF C5 H10 O4



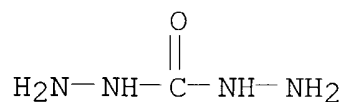
CM 4

CRN 629-11-8
CMF C6 H14 O2



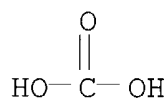
CM 5

CRN 497-18-7
CMF C H6 N4 O



CM 6

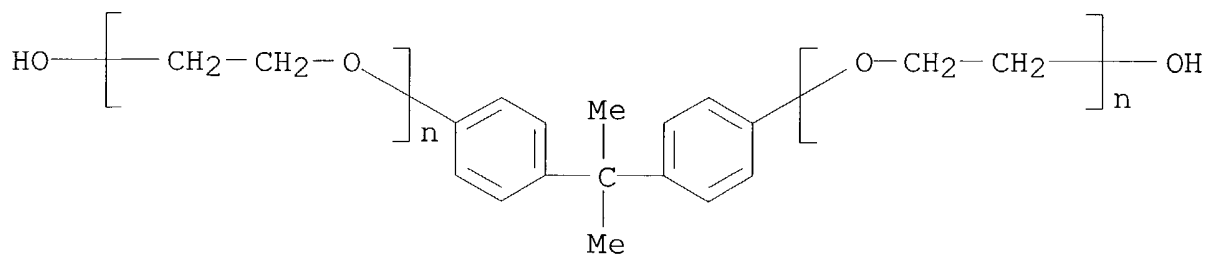
CRN 463-79-6
CMF C H2 O3



RN 150528-38-4 HCA
CN Carbonic acid, polymer with carbonic dihydrazide, 1,6-hexanediol, 1,1'-methylenebis[4-isocyanatocyclohexane], α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly(oxy-1,2-ethanediyl)] and 2,2'-(methylimino)bis[ethanol] (9CI) (CA INDEX NAME)

CM 1

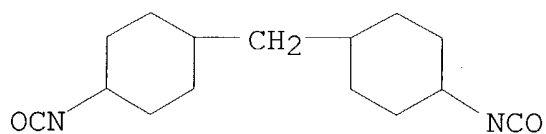
CRN 32492-61-8
CMF (C2 H4 O)_n (C2 H4 O)_n C15 H16 O2
CCI PMS



CM 2

CRN 5124-30-1

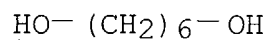
CMF C15 H22 N2 O2



CM 3

CRN 629-11-8

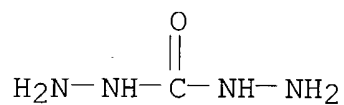
CMF C6 H14 O2



CM 4

CRN 497-18-7

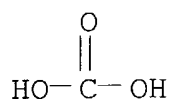
CMF C H6 N4 O



CM 5

CRN 463-79-6

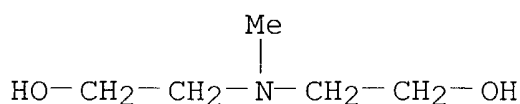
CMF C H2 O3



CM 6

CRN 105-59-9

CMF C5 H13 N O2



IC ICM C08G018-08

ICS C08G018-65

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 40, 42, 46

IT **Coating materials**

(polyurethanes, oil-in-water dispersions for, with good yellowing prevention)

IT **150528-37-3P 150528-38-4P**

(prepn. of, oil-in-water dispersions, with good yellowing prevention)

L93 ANSWER 18 OF 34 HCA COPYRIGHT 2004 ACS on STN

119:10529 Anticorrosive amine-modified **epoxy** resin

coating compositions. Tonomura, Sadaichi; Tanabe, Hironari; Futaesaku, Norio; Ogawa, Osamu; Nagai, Yoshinori (Dai Nippon Toryo KK, Japan). Jpn. Kokai Tokkyo Koho JP 05043833 A2 19930223 Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-200414 19910809.

AB Compns. for anticorrosive **coatings** for fabricated steel**sheets** comprise amine-modified **epoxy** resins

[obtained by treating 100 parts reaction products of bisphenol

A-based **epoxy** resins and bisphenol A with ≤ 5 partsaliph. **diisocyanates**, wt. av. mol. wt. (Mw) 8000-50,000],hydroxy-contg. amines, powd. SiO₂, and N-contg. **adhesion**

improvers, and optionally powd. solid lubricants. Thus, 235.7 parts

Epikote 828 was treated successively with 139.4 parts bisphenol A in

the presence of LiCl at 140°, with 8.2 parts HDI at

65°, and with 2.0 parts diethanolamine at 65° to give

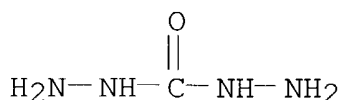
a 35.0% soln. of a product (I) with Mw 25,600 and no. av. mol. wt.

5500. A compn. contg. I 286, NPC-ST (colloidal silica) 100, and

3-amino-1,2,4-triazole 2 parts was applied to a steel **sheet**

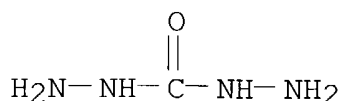
to 3 μm thickness and baked at 150° (max.) to form an anticorrosive **film** with good **adhesion**.

- IT 497-18-7, Carbohydrazide
 (adhesion improvers, for amine-modified **epoxy** resin anticorrosive **coatings**, for fabricated steel **sheets**)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



- IC ICM C09D163-00
 ICS C08G059-14; C09D005-08; C09D163-00
 CC 42-9 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 37, 55
 ST amine modified **epoxy coating** steel; HDI amine modified **epoxy coating**; diisocyanate amine modified **epoxy coating**; anticorrosive amine modified **epoxy coating**; silica amine modified **epoxy coating**; adhesion improver aminotriazole **epoxy coating**; lubricant amine modified **epoxy coating**
 IT **Epoxy** resins
 (amine-modified, **coatings**, contg. silica and nitrogen compds., for fabricated steel **sheets**)
 IT Lubricants
 (for amine-modified **epoxy** resin anticorrosive, for fabricated steel **sheets**)
 IT **Coating materials**
 (anticorrosive, amine-modified **epoxy** resins, contg. silica and nitrogen compds., for fabricated steel **sheets**)
 IT 60-10-6, Diphenylthiocarbazone 61-82-5, 3-Amino-1,2,4-triazole
 497-18-7, Carbohydrazide 6674-22-2
 (adhesion improvers, for amine-modified **epoxy** resin anticorrosive **coatings**, for fabricated steel **sheets**)
 IT 7631-86-9, Silica, uses
 (colloidal, amine-modified **epoxy** resin **coatings** contg., anticorrosive, for fabricated steel **sheets**)
 IT 1592-23-0, Stearic acid calcium salt
 (lubricants, for amine-modified **epoxy** resin anticorrosive **coatings**, for fabricated steel **sheets**)
 IT 12597-69-2

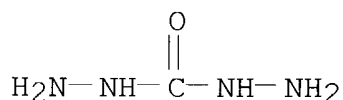
- (lubricants, for amine-modified **epoxy** resin anticorrosive, for fabricated steel **sheets**)
- IT 9002-84-0, Poly(tetrafluoroethylene) (powd., lubricants, for amine-modified **epoxy** resin anticorrosive **coatings**, for fabricated steel **sheets**)
- IT 110-73-6DP, reaction products with **diisocyanate**-modified **epoxy** resins 110-97-4DP, Diisopropanolamine, reaction products with **diisocyanate**-modified **epoxy** resins 111-42-2DP, Diethanolamine, reaction products with **diisocyanate**-modified **epoxy** resins 822-06-0DP, Hexamethylene **diisocyanate**, reaction products bisphenol A-based **epoxy** resins and diethanolamine 25068-38-6DP, Epikote 828, reaction products with HDI and diethanolamine 38661-72-2DP, 1,3-Bis(isocyanatomethyl)cyclohexane, reaction products with bisphenol A-based **epoxy** resins and ethylethanolamine (prepn. of, for anticorrosive **coatings** for fabricated steel **sheets**)
- IT 12597-69-2, Steel, miscellaneous (**sheets**, fabricated, anticorrosive **coatings** for, amine-modified **epoxy** resin compns. as)
- L93 ANSWER 19 OF 34 HCA COPYRIGHT 2004 ACS on STN 118:214569 Heat- and water-resistant, two-component aqueous adhesives. Ono, Yuji; Kondo, Teruhiko (Aica Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04255785 A2 19920910 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-37984 19910206.
- AB The title adhesives with quick adhesion comprise 1st component comprising (A) aq. soln. of acetoacetyl group-contg. polymers or emulsions and (B) aq. **epoxides** or **epoxy** resin emulsions and 2nd component comprising aq. soln. of hydrazines and/or **epoxy** crosslinkers. Thus, a 95:5 Gohsefimer Z 100 [aq. acetoacetylated poly(vinyl alc.)] and glycerin diglycidyl ether mixt. was applied on a lauan plywood and a 10% aq. adipic acid dihydrazide soln. was applied on another lauan plywood. They were pressed together at 3 kg/cm² for 10 s to show adhesive strength 7.2 kg/cm² initially and 33.0 kg/cm² after 7 day at room temp.
- IT **497-18-7DP**, Carbodihydrazide, reaction products with acetoacetylated poly(vinyl alc.) and glycerin diglycidyl ether (prepn. of, adhesives, heat- and water-resistant, with good adhesion)
- RN 497-18-7 HCA
- CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



- IC ICM C09J201-06
ICS C09J163-00; C09J201-06
- CC 38-3 (Plastics Fabrication and Uses)
- ST two component aq adhesive; polyvinyl alc adhesive water based; **epoxy** polymer adhesive water based; hydrazine hardener polyvinyl alc adhesive; water resistance adhesive polyvinyl alc; heat resistance adhesive polyvinyl alc
- IT Water-resistant materials
(adhesives, heat-resistant, two-component, contg. acetoacetyl group-contg. polymers and **polyepoxides** and hardeners)
- IT Heat-resistant materials
(adhesives, two-component, water-resistant, contg. acetoacetyl group-contg. polymers and **polyepoxides** and hardeners)
- IT **Adhesives**
(heat- and water-resistant, two-component, contg. acetoacetyl group-contg. polymers and **polyepoxides** and hardeners)
- IT **497-18-7DP**, Carbodihydrazide, reaction products with acetoacetylated poly(vinyl alc.) and glycerin diglycidyl ether 1071-93-8DP, Adipic acid dihydrazide, reaction products with acetoacetylated poly(vinyl alc.) and **polyepoxides** 9002-89-5DP, Poly(vinyl alcohol), acetoacetylated, reaction products with dihydrazide and **epoxides** 27043-36-3DP, Glycerin diglycidyl ether, reaction products with acetoacetylated poly(vinyl alc.) and dihydrazide 147212-08-6P 147282-18-6P 147282-19-7P 147312-25-2P 147370-02-3P
(prepn. of, adhesives, heat- and water-resistant, with good adhesion)
- L93 ANSWER 20 OF 34 HCA COPYRIGHT 2004 ACS on STN
- 115:11002 **Powder** coating compositions, coatings with flat finishes produced therefrom and blocked **polyisocyanates**.
Potter, Terry A.; Grubbs, Hugh C. (Mobay Corp., USA). Eur. Pat. Appl. EP 408997 A1 19910123, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1990-112823 19900705. PRIORITY: US 1989-380956 19890717.
- AB The title coatings, useful for stove lacquers, contain (A) blocked **polyisocyanates** having 10-35% blocked NCO and 0.5-10% CONHNHCO units and (B) polyhydroxy polyacrylates with blocked NCO/OH 0.5-2.0:1. Thus, a compn. of Joncryl 587 (acrylic polymer) a flow modifier, TiO₂, and a blocked isocyanate (blocked NCO 24.3% and CONHNHCO 3.8%) prepd. from bis(4-isocyanatohexyl)methane,

trimethylolpropane, and hydrazine hydrate-propylene carbonate adduct showed low gloss, good MEK resistance, and no obvious changes of whiteness after overbaking.

IT **497-18-7, Carbodihydrazide**
 (blocking agents, for **polyisocyanates**, for acrylic coatings with low gloss)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC ICM C08G018-80
 ICS C08G018-62; C07D223-10; C07C281-06; C09D175-04
 CC 42-10 (Coatings, Inks, and Related Products)
 ST acrylic **polyurethane** mat stove lacquer; hydrazine propylene carbonate adduct **polyisocyanate**; blocking agent mat acrylic **polyurethane**

IT **Coating materials**
 (acrylic **polyurethanes**, mat, from specific blocked **polyisocyanates**)

IT 108-32-7D, hydrazine adducts **497-18-7, Carbodihydrazide**
 935-30-8 7803-57-8D, adducts with propylene carbonate
 (blocking agents, for **polyisocyanates**, for acrylic coatings with low gloss)

L93 ANSWER 21 OF 34 HCA COPYRIGHT 2004 ACS on STN
 108:132754 Polyurethane dispersions. Grekov, A. P.; Sukhorukova, S. A. (USSR). *Plasticheskie Massy* (11), 45-7 (Russian) 1987. CODEN: PLMSAI. ISSN: 0554-2901.

AB Polyurethane-polysemicarbazide films of different hydrophilicity were prep'd. from polyurethane prepolymers PUI-K, PUI-A, and PUI-S, and hydrazine or hydrazine derivs. as chain extenders. PUI-K was obtained by the reaction of polytetramethylene glycol (I) with TDI and methyldiethanolamine; PUI-A was obtained by the reaction of I with 1,6-hexamethylene diisocyanate and pyromellitic dianhydride; and PUI-S by the reaction of polypropylene glycol with TDI and subsequent sulfonation of the prepolymer. Ionomers were obtained from carboxylate or sulfonate salts of the PUI-A or PUI-S polysemicarbazides, resp., and by quaternizing the PUI-K products. The ionomers could be used in the manuf. of cellulose, paper, and textiles, and in printing processes, finishing agents, impregnating compns., **adhesives**, etc. The colloidal-chem. and physicomach. properties of the ionomers could be controlled by using different hydrazine derivs. as chain extenders.

IT **88030-57-3DP, salts**

(ionomers, prepn. and properties of aq. dispersions of)

RN 88030-57-3 HCA

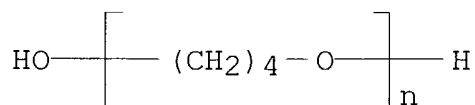
CN Carbonic dihydrazide, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 1,6-diisocyanatohexane and α -hydro- ω -hydroxypoly(oxy-1,4-butanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 25190-06-1

CMF (C4 H8 O)_n H2 O

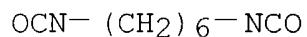
CCI PMS



CM 2

CRN 822-06-0

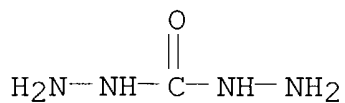
CMF C8 H12 N2 O2



CM 3

CRN 497-18-7

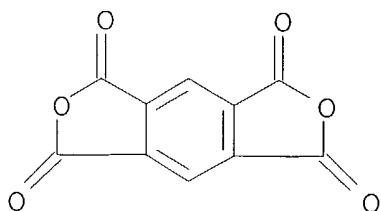
CMF C H6 N4 O



CM 4

CRN 89-32-7

CMF C10 H2 O6



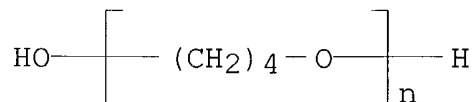
- CC 37-6 (Plastics Manufacture and Processing)
- IT 109-84-2DP, polymers with sulfonated polypropylene glycol-TDI copolymer salts 302-01-2DP, polymers with sulfonated polypropylene glycol-TDI copolymer salts 1071-93-8DP, polymers with sulfonated polypropylene glycol-TDI copolymer salts 2760-98-7DP, polymers with sulfonated polypropylene glycol-TDI copolymer salts 9057-91-4DP, Polypropylene glycol-TDI copolymer, sulfonated, salts, polymers with hydrazine derivs. 72186-82-4DP, quaternized **88030-57-3DP**, salts 88030-64-2DP, salts 96662-96-3DP, quaternized 104935-10-6DP, quaternized 104985-02-6DP, quaternized 113562-44-0DP, quaternized 113562-45-1DP, quaternized 113562-46-2DP, quaternized 119360-52-0DP, salts 129997-89-3DP, salts 129997-90-6DP, salts 129997-91-7DP, salts (ionomers, prepn. and properties of aq. dispersions of)
- L93 ANSWER 22 OF 34 HCA COPYRIGHT 2004 ACS on STN
- 99:213893 Properties of polyurethane ionomers with anionic groups in the main chain. Grekov, A. P.; Levchenko, N. I.; Sukhorukova, S. A. (Inst. Khim. Vysokomol. Soedin, Kiev, USSR). Ukrainskii Khimicheskii Zhurnal (Russian Edition), 49(9), 981-4 (Russian) 1983. CODEN: UKZHAU. ISSN: 0041-6045.
- AB The title polymers were prepd. by treating an NCO-terminated hexamethylene diisocyanate-polytetramethylene glycol prepolymer with pyromellitic dianhydride and NH_2NH_2 or its derivs. (i.e., $\text{NH}_2\text{NHZNHNH}_2$; Z = CO, COCO, COCH₂CO, COCHMeCO, etc.) as chain extenders. The polymers were obtained in the form of aq. dispersions (15-30% solids; **particle** diam. 30-500 nm) that were stable for 3-18 mos. Films cast from these dispersions had tensile strength (37-250) + 105 N/m², 100% modulus (21-69) + 105 N/m², 300% modulus (28-86) + 105 N/m², elongation 375-1175%, and permanent elongation 2.5-22.5%, vs. 89 N/m², 43 N/m², 63 N/m³, 400%, and 5.0%, resp., for a similar polymer prepd. using $\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2$ as the chain extender.
- IT **88030-57-3**
(rubber, mech. properties of)
- RN 88030-57-3 HCA
- CN Carbonic dihydrazide, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 1,6-diisocyanatohexane and α -hydro- ω -hydroxypoly(oxy-1,4-butanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 25190-06-1

CMF (C4 H8 O)n H2 O

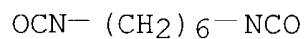
CCI PMS



CM 2

CRN 822-06-0

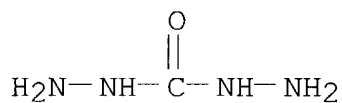
CMF C8 H12 N2 O2



CM 3

CRN 497-18-7

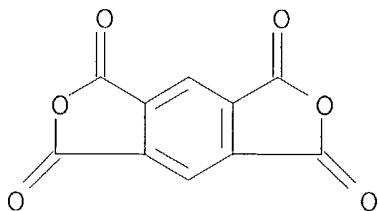
CMF C H6 N4 O



CM 4

CRN 89-32-7

CMF C10 H2 O6



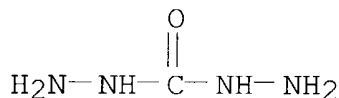
CC 39-12 (Synthetic Elastomers and Natural Rubber)

IT **88030-57-3** 88030-58-4 88030-59-5 88030-60-8

Cameron 10/089,423

88030-61-9 88030-63-1 88030-64-2 88030-65-3 88030-66-4
88030-67-5 88032-68-2 88032-69-3 88032-70-6 88032-71-7
119360-52-0 129997-90-6 129997-91-7
(rubber, mech. properties of)

L93 ANSWER 23 OF 34 HCA COPYRIGHT 2004 ACS on STN
98:199302 Curing of poly(glycidyl ether) resins. Sponseller, David R.;
Melby, Earl G.; Fabris, Hubert J. (General Tire and Rubber Co.,
USA). U.S. US 4377680 A 19830322, 9 pp. (English). CODEN:
USXXAM. APPLICATION: US 1982-382871 19820528.
AB Cyanoalkylated hydrazides are useful as curing agents for
epoxy resins, having useful pot life and showing fast cures.
Thus, 1.68 g bis(cyanoethyl)carbohydrazide [85785-04-2] was mixed
with 3.7 g Epon 828 [25068-38-6] to give a compn. having gel time
2.1 min at 149° and room temp. pot life 6 days.
IT **497-18-7**
(cyanoethylation of)
RN 497-18-7 HCA
CN Carbonic dihydrazide (9CI) (CA INDEX NAME) ✓



IC C08G059-44
NCL 528123000
CC 37-6 (Plastics Manufacture and Processing)
ST cyanoethylcarbohydrazide curing **epoxy**; carbohydrazide
cyanoethyl curing **epoxy**
IT **Epoxy** resins, uses and miscellaneous
(adhesives, curing agents for, cyanoethylated hydrazides as)
IT Crosslinking agents
(cyanoethylated hydrazides, for **epoxy** resins)
IT **Adhesives**
(**epoxy** resins, cured by cyanoethylated hydrazides)
IT 85785-03-1 85785-04-2 85785-05-3 85791-96-4 85801-66-7
(crosslinking agents, for **epoxy** resins)
IT **497-18-7** 2760-98-7 65502-32-1
(cyanoethylation of)

L93 ANSWER 24 OF 34 HCA COPYRIGHT 2004 ACS on STN
91:40746 Filter material and process for preparing same. Hilterhaus,
Karl-Heinz; Reuter, Franz Gottfried (Metallgesellschaft A.-G., Fed.
Rep. Ger.). Brit. GB 1538868 19790124, 10 pp. Addn. to Brit,
1,483,414. (English). CODEN: BRXXAA. APPLICATION: GB 1975-52199
19751219.
AB Filters were manufd. from textile or metal wire supports coated with

a porous polyurethane elastomer prepd. by mixing a soln. contg. 60-80% NCO adduct with a soln. contg. a diamino compd. chain extender and crosslinker and optionally a compd. contg. ≥ 2 Zeretwinov active H atoms, and when gelling was imminent coating the mixt. onto the support and coagulating the sheet in water. Thus, 2.04 mol 4,4'-diphenylmethane diisocyanate as a 70% DMF soln. was stirred at 40° under N and a 70% DMF soln. of adipic acid-1,6-hexanediol polymer (OH no. 139.5) was added at .apprx.65° during 30 min. The stable preadduct soln. contg. 2.5-3.0% NCO was added during 5 min to 3100 parts DMF and 50 parts hydrazine hydrate stirred at 35°, until the viscosity rose rapidly to give a polyurethane rubber [41578-87-4] soln. contg. 30% solids. The soln. was coated onto both sides of a textile support, immersed 90 s in water at 85°, and dried to give an elastic filter sheet.

IT 40464-33-3 41901-28-4 56447-91-7

(crosslinked, porous coatings, for filters)

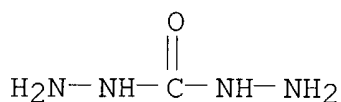
RN 40464-33-3 HCA

CN Hexanedioic acid, polymer with 1,4-butanediol, carbonic dihydrazide, 1,2-ethanediol and 1,1'-methylenebis[4-isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 497-18-7

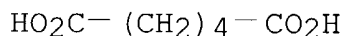
CMF C H6 N4 O



CM 2

CRN 124-04-9

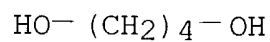
CMF C6 H10 O4



CM 3

CRN 110-63-4

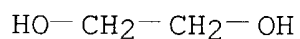
CMF C4 H10 O2



CM 4

CRN 107-21-1

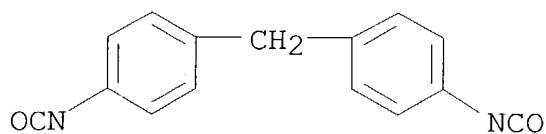
CMF C2 H6 O2



CM 5

CRN 101-68-8

CMF C15 H10 N2 O2



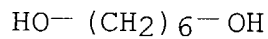
RN 41901-28-4 HCA

CN Hexanedioic acid, polymer with carbonic dihydrazide, 1,6-hexanediol
and 1,1'-methylenebis[4-isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 629-11-8

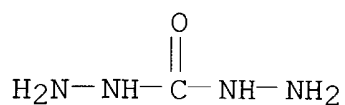
CMF C6 H14 O2



CM 2

CRN 497-18-7

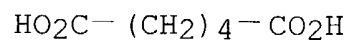
CMF C H6 N4 O



CM 3

CRN 124-04-9

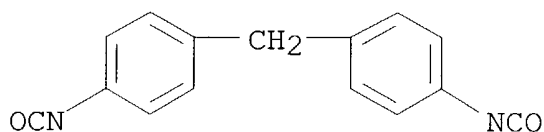
CMF C6 H10 O4



CM 4

CRN 101-68-8

CMF C15 H10 N2 O2



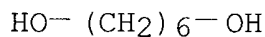
RN 56447-91-7 HCA

CN Hexanedioic acid, polymer with carbonic dihydrazide, 1,6-hexanediol, 1,1'-methylenebis[4-isocyanatobenzene] and 1,2,3-propanetriol (9CI)
(CA INDEX NAME)

CM 1

CRN 629-11-8

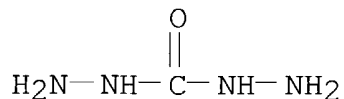
CMF C6 H14 O2



CM 2

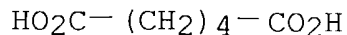
CRN 497-18-7

CMF C H6 N4 O



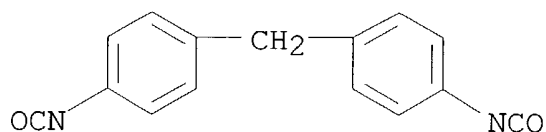
CM 3

CRN 124-04-9
CMF C6 H10 O4



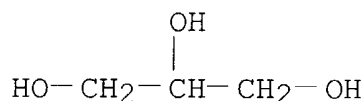
CM 4

CRN 101-68-8
CMF C15 H10 N2 O2



CM 5

CRN 56-81-5
CMF C3 H8 O3



IC B05D005-00; B32B005-22; B01D039-00; C08G018-10

CC 38-15 (Elastomers, Including Natural Rubber)
Section cross-reference(s): 39, 42

IT **Coating materials**

(polyurethane rubbers, polyester-based, for filters)

IT **40464-33-3** 41578-87-4 **41901-28-4** 56447-90-6

56447-91-7 70824-78-1 70824-79-2

(crosslinked, porous coatings, for filters)

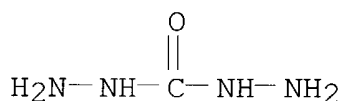
L93 ANSWER 25 OF 34 HCA COPYRIGHT 2004 ACS on STN

80:121729 Thermoplastic polyurea **powder**. Reiff, Helmut; Witt, Harro; Dieterich, Dieter (Bayer A.-G.). Ger. Offen. DE 2226526 19731213, 19 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1972-2226526 19720531.

AB **Particulate**, redispersible thermoplastic polyureas were manufd. by treating **polyisocyanates** with polyamides and(or) polyols and treating the product with chain extenders in such a way that the content of ionic groups in the polymer to be chain extended is 0.01-0.15 mequiv./g and the NH-NCO ratio is

0.1-0.95, using as chain extenders primary or secondary aliph. diamines or dicarboxylic acid dihydrazides. Thus, 950 g anhyd. hexanediol polycarbonate [24937-06-2] (mol. wt. 1870) was heated 1 hr at 100.deg. with 151 g hexamethylene **diisocyanate** [822-06-0], cooled to 60.deg. over 1 hr, mixed with 8 g N-methyldiethanolamine [105-59-9] in acetone, heated 3 hr at 60.deg., dild. with acetone, and quaternized with Me2SO4, giving 2234 g of a 50% soln. of a weakly cationic prepolymer (I) with NCO content 1.22%. I was treated with enough 1N aq. piperazine [110-85-0] to give NH-NCO ratio 0.79, giving a final product with m.p. 120-2.deg., which spontaneously formed a **powder**.

IT **497-18-7**
 (chain extenders, for **polyurethanes**-polyureas)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC C08G
 CC 36-3 (Plastics Manufacture and Processing)
 ST **polyurethane** polyurea thermoplastic; chain extender
 piperazine **polyurethane**; amine chain extender
 IT Polyureas
 (-**polyurethanes**, chain extenders for, diamines as)
 IT **Urethane** polymers, preparation
 (polyurea-, chain extenders for, diamines as)
 IT 78-90-0 107-15-3, uses and miscellaneous 110-85-0, uses and
 miscellaneous **497-18-7** 1071-93-8 25155-35-5
 (chain extenders, for **polyurethanes**-polyureas)

L93 ANSWER 26 OF 34 HCA COPYRIGHT 2004 ACS on STN
 79:67257 Steam-permeable polyurethane films. Grabhoefer, Herbert
 (Reuter, Gottfried, G.m.b.H.). Ger. Offen. DE 2157203 19730524, 16
 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1971-2157203
 19711118.
 AB Microporous H2O vapor-permeable polyurethane films, useful for
 coating of textiles and leather substitutes, were prepd. by reaction
 of polyesters with diisocyanates, followed by reaction with N2H4.H2O
 (I) or carbodihydrazide, addn. of 2-10% H2O, pouring the soln. onto
 glass, and evapn. of the volatile components. Thus, reaction of 81
 g polyester (OH no. 129) of adipic acid and HO(CH2)6OH with 47.4 g
 (4-OCNC6H4)2CH2 in DMF, addn. of 5 g I in DMF and 3 g H2O at
 5000-10,000 rpm, pouring the dispersion onto a glass plate, and
 evapn. of the solvent gave a microporous adipic acid-1,6-hexanediol-
 hydrazine-bis(4-isocyanatophenyl)methane copolymer [41578-87-4] film

of H₂O vapor permeability 1.5 mg/hr cm².
IT 39410-37-2 41901-28-4 41901-29-5
(films, water vapor-permeable)
RN 39410-37-2 HCA
CN Hexanedioic acid, polymer with 1,4-butanediol, carbonic dihydrazide,
1,2-ethanediol, 1,6-hexanediol and 1,1'-methylenebis[4-
isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 629-11-8

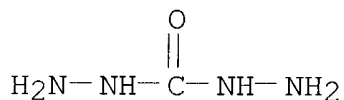
CMF C6 H14 O2

HO-(CH₂)₆-OH

CM 2

CRN 497-18-7

CMF C H6 N4 O



CM 3

CRN 124-04-9

CMF C6 H10 O4

HO₂C-(CH₂)₄-CO₂H

CM 4

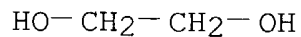
CRN 110-63-4

CMF C4 H10 O2

HO-(CH₂)₄-OH

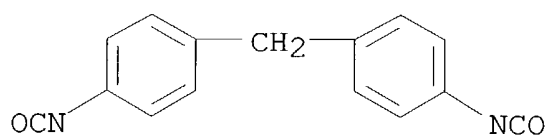
CM 5

CRN 107-21-1
CMF C2 H6 O2



CM 6

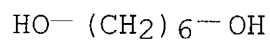
CRN 101-68-8
CMF C15 H10 N2 O2



RN 41901-28-4 HCA
CN Hexanedioic acid, polymer with carbonic dihydrazide, 1,6-hexanediol
and 1,1'-methylenebis[4-isocyanatobenzene] (9CI) (CA INDEX NAME)

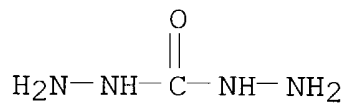
CM 1

CRN 629-11-8
CMF C6 H14 O2



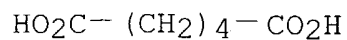
CM 2

CRN 497-18-7
CMF C H6 N4 O



CM 3

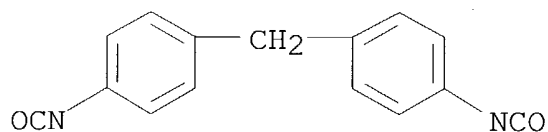
CRN 124-04-9
CMF C6 H10 O4



CM 4

CRN 101-68-8

CMF C15 H10 N2 O2



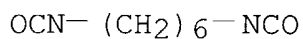
RN 41901-29-5 HCA

CN Hexanedioic acid, polymer with carbonic dihydrazide,
1,6-diisocyanatohexane and 1,6-hexanediol (9CI) (CA INDEX NAME)

CM 1

CRN 822-06-0

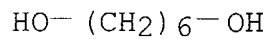
CMF C8 H12 N2 O2



CM 2

CRN 629-11-8

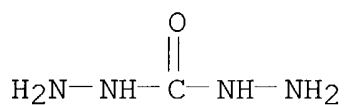
CMF C6 H14 O2



CM 3

CRN 497-18-7

CMF C H6 N4 O



CM 4

CRN 124-04-9
CMF C6 H10 O4 $\text{HO}_2\text{C}-(\text{CH}_2)_4-\text{CO}_2\text{H}$

IC C08J
CC 36-3 (Plastics Manufacture and Processing)
IT **Coating materials**
(polyurethanes, water vapor-permeable)
IT **39410-37-2** 41578-87-4 **41901-28-4**
41901-29-5 41922-30-9
(films, water vapor-permeable)

L93 ANSWER 27 OF 34 HCA COPYRIGHT 2004 ACS on STN
78:112797 Surface treatment of plasticized poly(vinyl chloride)
articles. Toogoo, Kazushi; Yamagata, Mineo; Akamatsu, Akira
(Ajinomoto Co., Inc.). Ger. Offen. DE 2223080 19721116, 20 pp.
(German). CODEN: GWXXBX. APPLICATION: DE 1972-2223080 19720512.

AB The **tack**-reducing properties of 6 poly(α -amino acid)
coatings on PVC [9002-86-2] synthetic leather was improved by
priming the leather with a soln. contg. 1 of 6 polyurethanes with
a cyclohexyl group in the mol. Thus, PVC leather was coated with a
DMF-THF soln. of poly(tetramethylene adipate)-bis(4-
isocyanatocyclohexyl)dimethylmethane-carbodihydrazide copolymer (I) [
38439-18-8] dried 10 min at 130.deg., overcoated with a
CH₂ClCH₂Cl-CCl₂:CCl₂ soln. of poly(γ -methyl glutamate) (II)
[25086-16-2], and dried 5 min at 130.deg.. The I-II-coated PVC
leather resisted scratching for > 3000 cycles and retained bending
strength for > 10,000 cycles compared with 400 and 800 cycles,
resp., when a soln. of poly(tetramethylene adipate)-diphenylmethane
4,4'-diisocyanate-carbodihydrazide copolymer was used as the primer.

IC B44D; C09D
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38

ST **tackiness** PVC leather substitute; polyamino acid coating;
polyglutamate coating; polyurethane coating;
isocyanatocyclohexylmethane polyurethane; carbodihydrazide
polyurethane

IT **Coating materials**
(primers, cyclohexyl group-contg. polyurethanes, on PVC leather
substitutes, for polyaminoacid topcoats)

L93 ANSWER 28 OF 34 HCA COPYRIGHT 2004 ACS on STN
71:82557 **Polyurethane** fibers with dyeability, light fastness,

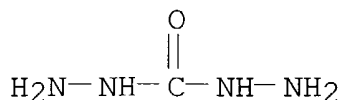
and fastness to waste gases. Oertel, Harald; Rinke, Heinrich; Rosendahl, Friedrich K. (Farbenfabriken Bayer A.-G.). U.S. US 3454671 19690708, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1964-408344 19641102.

AB **Polyurethane** fibers were prepd. which contained a stabilizing amt. of an org. compd. contg. at least 1 tertiary, aliphatic-substituted amine group and at least 1 group reactive with the polymer. Thus, 6000 parts adipic acid (I)-Me₂C(CH₂OH)₂-1,6-hexanediol copolyester was heated to 96-8° with 1630 parts distd. diphenylmethane 4,4'-**diisocyanate** and 1920 parts PhCl for 65 min., cooled, and 8630 parts of the soln. added to 230 parts carbodihydrazide in 18,950 parts HCONMe₂ at 70° over 1 hr. The mixt. (A) was colored with 550 parts of 33% TiO₂ **paste**. Approx. 100 parts 76% biuret **triisocyanate** (II) (from hexane **diisocyanate** and H₂O) in EtOAc soln. was dild. with 700 parts HCONMe₂, and a mixt. of 35.4 parts Et₂N(CH₂)₃NH₂ and 5.845 parts ethylenimine (III) in 200 parts HCONMe₂ was added dropwise with cooling. A soln. of 400 parts of this compn. (B) was dissolved in 10,000 parts mixt. A, and 63 parts 84% trisaziridine urea (reaction product of II and III) in dioxane was added. **Films** prepd. from the soln., dried, and heated at 130° for 1 hr. were colorless. These **films** showed less tendency to yellow after 25 hrs. in the Fade-Ometer or after 1.5 hrs. exposure to combustion gases than **films** prepd. from A without B added. The dye-absorption rate and depth of color were greater for threads spun from the treated polymer. Other polymer solns. were prepd. similarly from a I-HOCH₂CH₂OH-HO(CH₂)₄OH copolyester. Other modifying agents used were N,N'-bis(2,3-epoxypropyl)-piperazine; a basic bisurea from hexamethylene **diisocyanate** (IV), HCHO, and Me₂N(CH₂)₃NH₂; a basic bisurea from I, Et₂N(CH₂)₃NH₂, and HCHO; a basic polyurea from I, 3-(dimethylamino)-1,6-hexanediamine, and HCHO; and a basic **polyurethane** from 2,4-tolylenediisocyanate, bis(β-hydroxypropyl)methylamine, and HCHO. The stabilized fibers had improved dyeability, light fastness, and fastness to waste gases.

IT 497-18-7
(urethane polymers stabilized by, dyeable nonyellowing fibers and **films** from)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



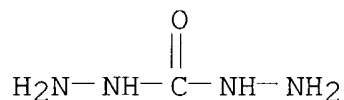
IC C08G

NCL 260859000
CC 39 (Textiles)
ST **polyurethane** fibers; fibers **polyurethane**;
dyeable **polyurethane** fibers; isocyanates derivs; gas
fastness fibers; ethylenimines; biurets; ureas
IT Fiber, spandex
 Urethane polymers, preparation
 (dyeable, stabilized by reactive amino compds.)
IT Amino compounds
 (**urethane** polymers stabilized by reactive)
IT 121-44-8, uses and miscellaneous 151-56-4 **497-18-7**
 2917-98-8 7803-57-8
 (**urethane** polymers stabilized by, dyeable nonyellowing
 fibers and **films** from)

L93 ANSWER 29 OF 34 HCA COPYRIGHT 2004 ACS on STN
65:91636 Original Reference No. 65:17179e-g Elastomeric
polyurethan spinning solutions. (Farbenfabriken Bayer
A.-G.). NL 6515899 19660609, 29 pp. (Dutch). PRIORITY: DE
19641208.

AB The title elastomers (I) are prepd. by reaction of polymeric linear
polyhydroxy compds. with **polyisocyanates** in the presence
of org. active N-contg. chain extenders (II) in polar org. solvents.
II are mixts. of conventional extenders and 3-50 mole % primary or
secondary diamines contg. ≥ 1 NHCO or CONHNHCO group, and in
which ≥ 2 NHCO groups are sepd. by a bivalent org. group; (b)
tertiary diamines (III); and (or) sulfonate group-contg. diamines
(IV). The final I contain 20-400 meq. III or IV groups. The I give
homogeneous solns. that do not gel. Thus, 1200 g. of the mixed
ester of adipic acid and a 65/35 molar mixt. of 1,6-hexanediol and
2,2-dimethyl-1,3-pentanediol (OH no. 66, acid no. 1.5) was heated 50
min. at 95-8° with 298 g. diphenylmethane 4,4'-
diisocyanate and 374 g. PhCl, and cooled to give a soln. (V)
contg. 2.09% by wt. NCO groups. A soln. of bis(ω -
aminohexyl)urea 4.13 and (H₂NCH₂)₂ 5.45 in HCONMe₂ (VI) 909 g.
reacts with 10 g. solid CO₂ to form aminocarbates and is mixed with
400 ml. of V, 25 g. of a 33% TiO₂-VI **paste**, and 0.6 g.
hexane **diisocyanate** to give a soln. (VII) with a viscosity
of 130-560 poises at 20°. The elastomer m. <265°.
The soln. is dry spun at 22° through a 16-hole (0.2-mm.)
spinneret at a rate of 100 m./min. and stretched for 0, 50, and
100%, resp., to give, after heat aging for 1 hr. at 130°, the
following properties: 218, 152, and 115 denier; tensile strength
0.77, 0.84, and 1.07 g./denier; elongation 700, 500, and 420%; and
ultimate tensile strength at break 5.63, 5.02, and 5.58 g./denier.
VII is cast to a 0.16-mm. **film** (45 min. at 70°, 45
min. at 100°) with a shear strength of 718 kg./cm.² and an
elongation of 645%.

IT 497-18-7, Carbohydrazide
 (urethan rubbers from diamines contg. bicarbamoyl,
 ureido or urethan groups, diisocyanates,
 polyols and, and fibers there-from)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



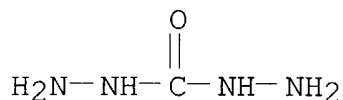
IC C08G
 CC 49 (Rubber and Other Elastomers)
 IT Amines
 (bicarbamoyl or urethan group-contg. di-,
 urethan rubbers from diisocyanates, polyols
 and, and fibers therefrom)
 IT Fibers, synthetic
 (from urethan polymer rubbers, from diamines contg.
 bicarbamoyl, ureido or urethan groups,
 diisocyanates and polyols, mech. properties of)
 IT Ethers
 (of glycols (polyalkylene), urethan rubbers from
 diamines contg. bicarbamoyl or urethan groups,
 diisocyanates and, and fibers therefrom)
 IT Esters
 (of glycols (polyalkylene), urethan rubbers from
 diamines contg. bicarbamoyl or urethan groups,
 diisocyanates and, and fibers therefrom)
 IT Glycols
 (polyalkylene and polyester, urethan rubbers from
 diamines contg. bicarbamoyl or urethan groups,
 diisocyanates and, and fibers therefrom)
 IT Rubber, substitute and synthetic
 (urethan polymers as, from diamines contg. bicarbamoyl
 or urethan groups, diisocyanates and polyols,
 and fibers therefrom)
 IT Carbamic acid, (3-aminopropyl)-, ethylene ester, urethan
 rubbers from diisocyanates, polyols and
 (and fibers therefrom)
 IT 1,6-Hexanediol, polymer with adipic acid and 2,2-dimethyl-1,3-
 pentanediol
 (polyesters, urethan rubbers from diamines contg.
 bicarbamoyl or urethan groups, diisocyanates
 and, OH group-terminated, and fibers therefrom)
 IT 1,3-Pentanediol, 2,2-dimethyl-, polyester with adipic acid and
 1,6-hexanediol

- (**urethan** rubbers from diamines contg. bicarbamoyl or **urethan** groups, **diisocyanates** and OH group-terminated)
- IT Adipic acid (1,4-butanedicarboxylic acid, hexanedioic acid), polyesters with 1,6-hexanediol
Adipic acid (1,4-butanedicarboxylic acid, hexanedioic acid), polyesters with 2,2-dimethyl-1,3-pentanediol
(**urethan** rubbers from diamines contg. bicarbamoyl or **urethan** groups, **diisocyanates** and OH group-terminated, and fibers therefrom)
- IT 124-38-9, Carbon dioxide
(reaction products with bis(ω -aminohexyl)urea and ethylene-diamine, **urethan** rubbers from **diisocyanates**, polyols and, and fibers therefrom)
- IT 107-15-3, Ethylenediamine
(reaction products with diamines contg. bicarbamoyl, ureido or **urethan** groups, **diisocyanates**, and polyols, and fibers therefrom)
- IT 13176-57-3, Biurea, 1,6-bis[3-[4-(3-aminopropyl)-1-piperazinyl]propyl]-
(**urethan** rubbers from **diisocyanates**, polyols and, and fibers therefrom)
- IT 101-68-8, Isocyanic acid, methylenedi-p-phenylene ester 822-06-0,
Isocyanic acid, hexamethylene ester
(**urethan** rubbers from diamines contg. bicarbamoyl or **urethan** groups, polyols and, and fibers therefrom)
- IT 497-18-7, Carbohydrazide
(**urethan** rubbers from diamines contg. bicarbamoyl, ureido or **urethan** groups, **diisocyanates**, polyols and, and fibers therefrom)
- IT 13176-54-0, Succinamide, N,N'-bis(2-aminoethyl)- 13176-55-1, Urea, 1,1'-hexamethylenebis[3-[3-[(3-aminopropyl)methylamino]propyl]-
13176-56-2, Biurea, 1,6-bis[3-[(3-aminopropyl)methylamino]propyl]-
13176-58-4, Succinamide, N,N'-bis[3-[(3-aminopropyl)methylamino]propyl]- 13176-59-5, Succinamide, N,N'-bis(2-aminopropyl)- 13176-60-8, Urea, 1,1'-hexamethylenebis[3-[3-(methylamino)propyl]- 13176-61-9, 1-Hexanesulfonic acid, 6,6'-(succinyldiimino)bis[1-amino-, disodium salt 13176-63-1, Carbamic acid, hexamethylenedi-, bis(3-aminopropyl) ester
13176-64-2, Ethylene glycol, bis[(3-aminopropyl)carbamate]
13176-65-3, Urea, 1,3-bis(2-piperidylmethyl)- 13176-66-4, Urea, 1,3-bis[3-[(3-aminopropyl)[3-(diethylamino)propyl]amino]propyl]-
13176-67-5, Urea, 1,3-bis(6-aminoethyl)-
(**urethan** rubbers from **diisocyanates**, polyols and, and fibers therefrom)

films by isocyanate polyaddition. Thoma, Wilhelm; Oertel, Harald; Heydkamp, Wolfgang; Rinke, Heinrich; Mueller, Erwin (Farbenfabriken Bayer A.-G.). DE 1217058 19660518, 6 pp. (Unavailable). APPLICATION: DE 19630907.

AB Highly elastic **films** or fibers are prepd. by the isocyanate polyaddn.-process in which NCO groups react with linear high-mol.-wt. hydroxy-terminated polyether so that an N-hydroxyalkyl-N-alkylurethan-modified polyether of the general formula $\text{HOR}_1\text{NR}_2\text{CO}(\text{OR})_x\text{CONR}_2\text{R}_1\text{OH}$, mol. wt. 500-5000, m.p. $<70^\circ$ and in which R is a divalent aliphatic, cycloaliphatic or araliphatic residue, R_1 is a divalent aliphatic residue, and R_2 is a monovalent satd. or unsatd. aliphatic, cycloaliphatic or araliphatic residue and x is an integer >3 . For example, to a soln. of 159 g. $\text{MeNHCH}_2\text{CH}_2\text{OH}$ in 2 l. C_6H_6 and 290 g. K_2CO_3 in 350 ml. H_2O at 30° 1655 g. of the chloroformate of polytetrahydrofuran (mol. wt. 1580) is added, and the mixt. is heated for 3 hrs. at 60° . After sepg. the aq. phase, washing the C_6H_6 soln. with H_2O , and distg., a viscous oil of OH content 2.03% is obtained. To 600 g. of this, 144 g. $(p\text{-OCNC}_6\text{H}_4)_2\text{CH}_2$ and 186 g. PhCl are added. After 2 hrs. at 98% the NCO content, upon cooling, is only 1.71%. To a freshly prepared soln. of 4.55 g. of 96.4% $\text{N}_2\text{H}_4 \cdot \text{H}_2\text{O}$ in HCONMe_2 , 30 g. dry ice is added and the mixt. is vigorously stirred. To the resulting suspension of NH_2NHCOOH , 403 g. of the NCO adduct is added during 10 min. The soln. is pigmented with 24.5 g. 33% TiO_2 **paste** in HCONMe_2 and cast on a glass plate to give a 0.2-mm. **film** of high elasticity.

IT 497-18-7, Carbohydrazide
 (**urethan** rubbers from NCO group-terminated
 urethan polymers and)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC C08G
 CC 49 (Rubber and Other Elastomers)
 IT Fibers, synthetic
 (from **urethan** polymer rubbers, from
 diisocyanates and N-hydroxyalkyl-N-alkylurethan-modified
 polyethers)
 IT Glycols
 (polyalkylene, N-hydroxyalkyl-N-alkylurethan-modified,
 urethan-polymer rubbers from **diisocyanates** and)
 IT Rubber, substitute and synthetic
 (**urethan** polymers as, from **diisocyanates** and

- N-hydroxyalkyl-N-alkylurethan-modified polyethers)
- IT Ethers
(N-hydroxyalkyl-N-alkylurethan-modified, **urethan**-polymer rubbers from **diisocyanates** and)
- IT Formic acid, chloro-, diester
(with polyalkylene glycols, reaction products with hydroxyamines, **urethan**-polymer rubbers from **diisocyanates** and)
- IT 109-83-1, Ethanol, 2-(methylamino)- 2842-38-8, Ethanol, 2-(cyclohexylamino)-
(reaction products with polyalkylene glycol bis(chloroformates), **urethan**-polymer rubbers from **diisocyanates** and)
- IT 497-18-7, Carbohydrazide
(**urethan** rubbers from NCO group-terminated **urethan** polymers and)
- IT 101-68-8, Isocyanic acid, methylenedi-p-phenylene ester
(**urethan**-polymer rubbers from N-hydroxyalkyl-N-alkylurethan-modified polyethers and)
- IT 584-84-9, Isocyanic acid, 4-methyl-m-phenylene ester
(**urethan**-polymer rubbers from N-hydroxyalkyl-N-alkylurethan-modified polyethers and)
- IT 24979-97-3, Furan, tetrahydro-, homopolymer
(N-hydroxyalkyl-N-alkylurethan-modified, **urethan**-polymer rubbers from **diisocyanates** and)

L93 ANSWER 31 OF 34 HCA COPYRIGHT 2004 ACS on STN

63:72995 Original Reference No. 63:13528h,13529a-c **Polyurethan** films or fibers. (Farbenfabriken Bayer A.-G.). NL 6412962 19650507, 20 pp. (Unavailable). PRIORITY: DE 19631106.

AB **Films** or fibers prep'd. from **polyurethan** resins contg. 0.5-5% of an aliphatic tertiary amine having ≥ 1 ethyleneimino, **epoxy**, methylol, or methylol ether group, or 1 capable of producing a NCO link, are heated to improve their light stability, their resistance to combustion gases, and their dyeability. Thus, 6 kg. of a copolyester (OH no. 67) of adipic acid, 2,2-dimethyl-1,3-dihydroxypropane, and 1,6-hexanediol (mole ratio of the glycols 35:65), 1.63 kg. freshly distd. 4,4'-diphenylmethane **diisocyanate**, and 1.92 kg. PhCl were heated at 96-8° for 65 min. to give a product (I) contg. 2.45% NCO. Then, 8.63 kg. I was added in 1 hr. to a stirred soln. of 0.23 kg. carbazide in 18.95 kg. HCONMe₂ at 70° and the mixt. was pigmented with 0.55 kg. of a 33% TiO₂ **paste**. A mixt. of 1-amino-3-(diethylamino)propane 35.4, ethylenimine 5.845, and HCONMe₂ 200 g. was added dropwise to a ice-cooled mixt. of 100 g. of a 76% soln. of biuret **triisocyanate** in EtOAc and 100 g. HCONMe₂. Then a compn. contg. 400 g. of this modifying soln. (II), 10 kg. of the **polyurethan** resin soln., and 63 g. of an 84% soln. of a tris(aziridiny)urea in dioxane was used to make 0.2mm. **films** and to dry-spin 400-denier fibers. The

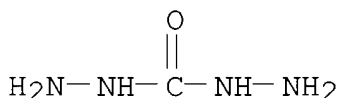
films, which were pink after drying at 100% became colorless upon heating for 1 hr. at 130°. The light stability and the resistance to the combustion gases at 85-90° were better than those of **films** made from compns. without II, while the fibers could be easily tinted with acid and complex dyes after treatment at 130°.

IT 497-18-7, Carbohydrazide

(**urethan** polymers from isocyanate-polyester adducts and, modified by tertiary amine compds. contg. **epoxy**, ethyleneimino, methylol groups, etc.)

RN 497-18-7 HCA

CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



IC C08G

CC 48 (Plastics Technology)

IT Fibers, synthetic

(from **urethan** polymers, modified by tertiary amine compds. contg. **epoxy**, ethyleneimino, methylol group etc.)

IT **Urethane** polymers

(modified by tertiary amine compds. contg. **epoxy**, ethyleneimino methylol groups, etc., elastic fibers and **films** from)

IT Light

(stabilization of **urethan** polymers by modifn. with tertiary amine compds. contg. **epoxy**, ethyleneimino, methylol groups, etc.)

IT Isocyanic acid, methylenedi-p-phenylene ester, **urethan** polymers from polyesters

Piperazine, 1,4-diamino-, **urethan** polymers from isocyanate-polyester adducts and (modified by tertiary amine compds. contg. **epoxy**, ethyleneimino, methylol groups, etc.)

IT 75-13-8, Isocyanic acid

(hexamethylene ester reaction products with biuret, reactions products with 1-amino-3-diethylaminopropane and ethylenimine, **polyurethans** modified by)

IT 151-56-4, Ethylenimine

(reaction products with biuret **triisocyanate** and 1-amino-3-(diethylamino)propane, **polyurethans** modified by)

IT 104-78-9, 1,3-Propanediamine, N,N-diethyl-

(reaction products with biuret **triisocyanate** and

- ethylenimine, **polyurethans** modified by)
- IT 108-19-0, Biuret
(reaction products with **hexamethylenediisocyanate**,
reaction products with 1-amino-3-diethylaminopropane and
ethylenimine, **polyurethan** modified by)
- IT 497-18-7, Carbohydrazide
(**urethan** polymers from isocyanate-polyester adducts
and, modified by tertiary amine compds. contg. **epoxy**,
ethyleneimino, methylol groups, etc.)
- IT 302-01-2, Hydrazine
(**urethan** polymers from isocyanate-polyester adducts
and, modified by tertiary amine compds. contg. **epoxy**,
ethylenimino, methylol groups, etc.)
- IT 2917-98-8, Piperazine, 1,4-bis(2,3-epoxypropyl)-
(**urethan** polymers modified by, for elastic fibers and
films)

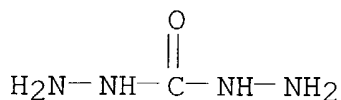
L93 ANSWER 32 OF 34 HCA COPYRIGHT 2004 ACS on STN

59:49103 Original Reference No. 59:8946b-e Polymers containing
urethan and semicarbazide groups. Thoma, Wilhelm; Rinke,
Heinrich; Oertel, Harald (Farbenfabriken Bayer A.-G.). DE 1150517
19630620, 5 pp. (Unavailable). APPLICATION: DE 19611230. ✓

AB The title compds. are obtained by a two-step chain extension. An
essentially linear, isocyanate-terminated polyhydroxy compd., mol.
wt. 500-5000, preferably in an inert solvent, is first treated with
10 to 90% (in terms of its equiv. wt. of NCO groups) of polyhydric
alcs. In a second step, the residual NCO groups are treated with 90
to 110% (of their equiv.) of a hydrazine deriv. (I) of the general
formula $RNHN(R')A(XA)nN(R')NHR$, $RNHXAN(R')NHR$, or $HOXAN(R')NHR$,
where A is CO, CS, or SO₂; R and R' are H, alkyl, or aryl; X is an
alkylene, arylene, aralkylene, OYO, or NHYNH radical (Y =
bifunctional org. radical); n is 0 or 1. Undesirable gelation is
avoided by the use of an excess of I. The reaction products may be
used, without prior removal of the solvents, for coatings or spun
into fibers. Fillers, pigments, antioxidants, etc., may be added.
The products are highly elastic and abrasion resistant. They have a
long potlife. In an example, 150 g. of a polyester (OH no. 56) from
diethylene glycol and adipic acid was dehydrated, then treated for 1
hr. at 60° with 4,4'-**diisocyanatodiphenyldimethylmethane**
. 1,4-Butanediol (0.7 g.) was added, the prepolymer dissolved
in 90 g. PhCl at 75-80° and cooled to 20° after 15
min., and 180 g. HCONMe₂ added. To 307 g. of this soln. at
0-5°, a soln. of 3.42 g. CO(NHNH₂)₂ in 200 g. HCONMe₂ was
added dropwise while stirring. As a shortstop, 1 g. NH₂NHCOOEt in
15 g. HCONMe₂ was added, followed by 1.5 ml. O(CO₂Et)₂ in 5 g.
HCONMe₂ to destroy excess shortstop. The soln. was concd. in vacuo
to 39%. To 500 g. of this soln., 160 g. kaolin, 20 g. TiO₂, and 20
g. org. pigment were added, the mixt. was spread on a cotton fabric,

and the solvents were evapd. The usefulness of the mixt. was not impaired after 8 weeks storage at 30°.

IT **497-18-7, Carbohydrazide**
 (derivs., in **polyurethan** manuf.)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



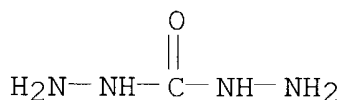
NCL 39B
 CC 48 (Plastics Technology)
 IT **Coating(s)**
 Fibers, synthetic
 (from **urethan** polymers, with semicarbazide groups)
 IT Alcohols
 (**urethan** polymer chain-extension by polyhydric)
 IT **Urethane** polymers
 (with semicarbazide groups, by chain extension with polyhydric
 alcs. and hydrazine derivs.)
 IT Diethylene glycol, **urethan**-polymer chain-extension
 IT **497-18-7, Carbohydrazide**
 (derivs., in **polyurethan** manuf.)
 IT 57-56-7, Semicarbazide
 (derivs., **urethan** polymers modified by)
 IT 302-01-2, Hydrazine
 (from reaction of amines with imidogen radical from hydrolysis of
 hydroxylamine-O-sulfonic acid, **urethan**-polymer
 chain-extension by, for semicarbazide group introduction)
 IT 110-63-4, 1,4-Butanediol
 (**urethan**-polymer chain-extension by)

L93 ANSWER 33 OF 34 HCA COPYRIGHT 2004 ACS on STN ✓
 56:46844 Original Reference No. 56:8932f-g Carbohydrazide curing agent
 for **epoxide**-type resins. Levine, Harold H. (Narmco
 Industries, Inc.). US 3014009 (Unavailable). APPLICATION: US
 19590720.

AB Carbohydrazide (I) (6-40 parts), mixed with 100 parts
epoxide resins (II), having a 1,2-**epoxide** equiv.
 of > 1, produced by the reaction of a polyhydric phenol with a 1,2-
epoxy-3-halohydrin, provides resinous compns. stable at
 <40°F., which are capable of being cured at relatively low
 temps, and for relatively short periods of time to give preblended
 II systems with greatly improved phys. properties and resistance to
 certain chemicals. Thus, 100 parts of **epoxy**-novolak resin
 (Dow X2638 series) is mixed with 24 parts I. The resin mixt. is

stable at $gt;40^{\circ}\text{F}$. The mixt. poured onto a metal strip, heated in situ 15 min. at 275°F ., and 40 min. at 310°F . is completely cured and has extremely good salt-spray resistance.

IT 497-18-7, Carbohydrazide
 (epoxy resin curing by)
 RN 497-18-7 HCA
 CN Carbonic dihydrazide (9CI) (CA INDEX NAME)



CC 47 (Plastics)
 IT Epoxy resins
 (curing or crosslinking agents for, carbohydrazide as)
 IT Coating(s)
 (from epoxy resins, carbohydrazide as curing agent of)
 IT 497-18-7, Carbohydrazide
 (epoxy resin curing by)

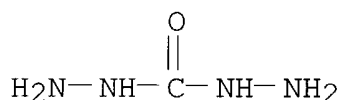
L93 ANSWER 34 OF 34 HCA COPYRIGHT 2004 ACS on STN

54:59576 Original Reference No. 54:11541d-i Condensation polymers from **diisocyanates** with dihydrazides and hydrazine. Campbell, Tod W.; Foldi, Veronika S.; Farago, John (E. I. du Pont de Nemours & Co., Wilmington, DE). Journal of Applied Polymer Science, 2(No. 5), 155-62 (Unavailable) 1959. CODEN: JAPNAB. ISSN: 0021-8995.

AB Polyureylenes $[-\text{RNHC}(:\text{O})\text{NHNHC}(:\text{O})\text{NH-}]_n$ (I) and poly(acylsemicarbazides) $[-\text{RNHC}(:\text{O})\text{NHNHC}(:\text{O})\text{R}'\text{C}(:\text{O})\text{NHNHC}(:\text{O})\text{NH-}]_n$ (II) were prep'd. in dimethylformamide (III) or dimethyl sulfoxide (IV) by treating stoichiometric quantities of **diisocyanates** with hydrazine (V) and dihydrazides, resp., to yield viscous solns., some suitable for conversion to tough **films** and fibers. Anhyd. V was unnecessary. Reaction of 1 cc. anhyd. V with 5.3 cc. 2,4-tolylylene **diisocyanate** (VI) in 20 cc. III gave a polymer of $[\eta]_{\text{inh}} \text{III } 0.15$, castable to a clear, flexible **film**. The product of V with methylenebis(p-phenyl isocyanate) (VII) in IV was insol. in III or V. Substitution of 3,3'-dimethoxy-4,4'-biphenylylene **diisocyanate** gave a more sol. product, $[\eta]_{\text{inh}} \text{III } 0.60$, PMT 275° . V-4,4'-biphenylylene **diisocyanate** in IV at 40° gave a polymer $[\eta]_{\text{inh}} 1.60$, decomp. without melting at 400° . Polymer from V hydrate and VII in III was spun in 50% III/H₂O to give light-resistant fibers decomp. at 300° , capable of stretch orienting. Product of V hydrate and dimethoxybiphenylylene **diisocyanate** was unstable to light, with PMT 280° ; that from VII and oxalyl dihydrazide (VIII) had PMT 270° , was

very light sensitive, and did not crystallize on stretching. Similar polymers of VIII with VI and 3,3'-dimethyl-4,4'-biphenylene **diisocyanate** were of relatively low mol. wt. VIII-hexamethylene **diisocyanate** (IX) gave a H₂O-sensitive polymer, $[\eta_{inh}]_{IV}$ 0.37, sol. in formic acid, PMT 216°. Dry-spun fibers from isophthaloyl dihydrazide (X) and VII, PMT 250°, stretched 3 + at 100°, had fiber **stick** temp. 240°, $[\eta_{inh}]_{IV}$ 0.98, tenacity 3.7 gm. per denier, elongation 31%, initial modulus 42 g./denier. Other polymers prepd. were X-VI, PMT 230°, $[\eta_{inh}]_{IV}$ 0.41; X-3,3'-dimethoxy-4,4'-biphenylene **diisocyanate**, a clear, brittle **film**, PMT 230°, $[\eta_{inh}]_{IV}$ 0.51; X-3,3'-dimethyl-4,4'-biphenylene **diisocyanate**, PMT 260°, $[\eta_{inh}]_{IV}$ 1.32; X-IX, PMT 220°, $[\eta_{inh}]_{IV}$ 0.19; terephthaloyl dihydrazide (XI)-VII, PMT 240°, $[\eta_{inh}]_{IV}$ 0.41; XI-VI, insol. in IV; carbonyl dihydrazide of 3,3'-dimethyl-4,4'-biphenylene **diisocyanate**, PMT 280°, $[\eta_{inh}]_{IV}$ 1.46. At 100°, $[\eta_{inh}]$ of the polymers tended to decrease and N analyses became low. Addn. of monoisocyanates and acid chlorides did not increase stability. Model compds. from dihydrazides and monoisocyanates did not degrade under the same conditions. $[\eta_{inh}] = 2 \ln \eta_{rel}$.

IT 497-18-7, Carbonyl dihydrazide
 (condensation with 3,3'-dimethyl-4,4'-biphenylene **diisocyanate**)
 RN 497-18-7 HCA
 CN Carbonyl dihydrazide (9CI) (CA INDEX NAME)



CC 31 (Synthetic Resins and Plastics)
 IT Condensation, chemical
 (of dihydrazides, **diisocyanates** and hydrazine)
 IT Hydrazides
 (reaction with **diisocyanates** to
 poly(acylsemicarbazides))
 IT m,m'-Bitolyl, 4,4'-**diisocyanato**-
 (reaction with carbonyl dihydrazide and oxalyl dihydrazide)
 IT 57-56-7, Semicarbazide
 (acyl derivs., polymers of, from **diisocyanate**
 condensation with dihydrazides)
 IT 497-18-7, Carbonyl dihydrazide
 (condensation with 3,3'-dimethyl-4,4'-biphenylene **diisocyanate**)
 IT 302-01-2, Hydrazine

(reaction with **diisocyanates** to polyureylenes)
IT 2760-98-7, Isophthalic acid, dihydrazide
(reaction with isocyanic acid diester, fibers and **films**
from)